Avid® AirSpeed® 5000/ AirSpeed I 5500
Administrator's Guide

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Using This Guide

Congratulations on your purchase of an Avid ingest and playout server. You can use your AirSpeed 5000 or AirSpeed 5500 server to capture incoming media directly into Avid shared storage or play out media to air. Media can be captured directly into Avid ISIS workspaces unattended, freeing the Avid editing system for editing. Use the Avid editing system to edit the captured media into sequences and send the sequence back to the AirSpeed server for playout.

This guide contains all the administration and configuration instructions you need to administer the Avid product.

Unless noted otherwise, the material in this document applies to the Windows® 7 operating systems.

The majority of screen shots in this document were captured on a Windows® 7 system.

The documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
‣	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
(Windows), (Windows only), (Macintosh), or (Macintosh only)	This text indicates that the information applies only to the specified operating system, either Windows or Macintosh OS X.
Bold font	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Ctrl+key or mouse action	Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag.

If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check the latest information that might have become available after the documentation was published.

   New information would be found in the ReadMe file supplied on your Avid installation DVD as a PDF document and is also available online.

   You should always check online for the most up-to-date release notes or ReadMe because the online version is updated whenever new information becomes available. To view the online versions, visit the Knowledge Base at www.avid.com/support.
3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.
4. Visit the online Knowledge Base at www.avid.com/support. Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

Accessing the Online Documentation

The Avid AirSpeed 5000 online documentation contains all the product documentation in PDF format. You can access the documentation in the Avid Knowledgebase. You need to download and install Acrobat Reader on your Avid AirSpeed 5000 or AirSpeed 5500 server before you can access the PDF documentation.

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1 Working with the AirSpeed 5000 Management Console

The AirSpeed 5000 Management Console is a web-based interface that you will use to configure and maintain your AirSpeed 5000 or AirSpeed 5500 server.

Prior to proceeding with AirSpeed 5000 configuration using the Management Console, please ensure that your AirSpeed 5000 or AirSpeed 5500 server is installed and connected using the information in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*. In addition, there are some configuration requirements based on the mode you are configured in. For more information, see "Configuration Requirements" on page 10.

If you have already configured your AirSpeed server, then you can log in. See "The Login Page" on page 19.

The following main topics describe how to use the AirSpeed 5000 Management Console to setup and administer your AirSpeed 5000 system:

- Configuration Requirements
- Logging In
- Navigating the Management Console
- The Server Mode Page
- The Record Templates Page
- The Destination Templates Page
- The Record Page
- The Playback / Output Page
- The Users Page
- The Inventory Page
- The Serial Control Page
- The GPI Page
- The FTP Folders Page
- The Activation Page

- The Deactivation Page
- The Restart Page
- The Job Status Page
- The Configurations Page
- The Backup / Restore Page

Configuration Requirements

Before you begin using the AirSpeed 5000 Management Console, you must perform some basic configuration based on the environment for your site.

For more information on the various environments AirSpeed 5000 can be configured in, see "Determining Your AirSpeed 5000 Environment" on page 10.

Otherwise, if you know the environment for your site, see the following topics:

- "Standalone Mode Configuration Requirements" on page 11
- "Team Mode Configuration Requirements" on page 12
- "Interplay Production Mode Configuration Requirements" on page 14

Determining Your AirSpeed 5000 Environment

The AirSpeed 5000 or AirSpeed 5500 server can be configured in one of three ways:

- In a **Standalone** Video Server environment, the AirSpeed 5000 or AirSpeed 5500 server uses only its own internal storage for storing clips. Clips can be transferred directly between the Avid Editor (Media Composer or NewsCutter) and the AirSpeed 5000 or AirSpeed 5500 server.
- In a **Team** environment, AirSpeed 5000 or AirSpeed 5500 uses shared storage (no Interplay). Clips are transferred directly between the AirSpeed 5000 or AirSpeed 5500 server and the shared storage.
- In an **Interplay Production** environment, the AirSpeed 5000 or AirSpeed 5500 server operates as a member of an integrated Interplay workgroup and ISIS Shared storage environment. Clips are transferred directly between the AirSpeed 5000 or AirSpeed 5500 server and the shared storage.

Before you can use the AirSpeed 5000 Management Console to configure your record and playback settings, there are some basic configuration requirements you must perform. For more information, see the following topics:

- “Standalone Mode Configuration Requirements” on page 11
- “Team Mode Configuration Requirements” on page 12
- “Interplay Production Mode Configuration Requirements” on page 14

Once you have performed the basic configuration for any of these environments, you can use the *AirSpeed 5000 Management Console* to perform other administrator tasks.

Standalone Mode Configuration Requirements

There are some requirements necessary when configuring AirSpeed 5000 in a Standalone mode.

If configuring for Standalone mode, do the following:

- Configure the Avid Service Framework, as described in the topic “Configuring the Avid Service Framework (for Standalone or Team Mode)” on page 15.
- In the Management Console on the AirSpeed 5000 server, do the following:
  - On the Server Mode page, specify **Standalone** mode.
  - On the Record Template page, create a Record template that is customized for your needs.
  - On the Destination Template Page, create a Destination template. You can set the Clip name and Tape Name if you want. Other fields are not used.
  - On the Record page, set channel configurations.
  - On the User’s page, create users with the same credentials as the OS users that they will be logged in as on the Avid Editor. This enables these users to access the AirSpeed 5000 server inventory via the AirSpeed 5000 Remote Console on the Avid Editor.
- On the Avid Editor, you must do the following:
  - Install the application (Media Composer, NewsCutter, or Symphony).
  - Locate the **AvidAirSpeed5000RemoteConsole.zip** file and uncompress it to your desktop.
  - Within the AvidAirSpeed5000RemoteConsole folder, run **Avid AirSpeed Remote Console.exe**.
  - Install Interplay Transfer Engine/Client.
  - Start the AirSpeed 5000 Remote Console application.
  - Connect to a server.

- Enable transfers for AirSpeed 5000 or AirSpeed 5500 servers in a Standalone environment.
- Start the Interplay Transfer Engine.
- Configure the Standalone settings.

This can be done manually using the Avid Interplay Transfer Engine Configuration window.

For more information, see the *AirSpeed 5000 / AirSpeed | 5500 Remote Console Operator's Guide*.

Team Mode Configuration Requirements

This topic contains information on the requirements necessary when configuring AirSpeed 5000 in a Team mode.

If configuring for Team mode, do the following:

- Configure the Avid Service Framework, as described in the topic "Configuring the Avid Service Framework (for Interplay Production Mode)" on page 18.
- In the AirSpeed 5000 Management Console on the server, do the following:
  - On the Server Mode page, specify **Team mode**.
  - On the Record Template page, create a Record template that is customized for your needs.
  - On the Destination Template page, create a Destination template that uses a valid workspace on your shared storage. You can set the Clip name and Tape ID if you want. Other fields are not used.
  - On the Record page, set channel configurations. You can ignore the Destination template settings in Team mode, since you define this with the 'transfer destination of last resort' located on the Inventory page.
  - On the User's page, create users with the same credentials as the OS users that they will be logged in as on the Avid Editor. This enables these users to access the AirSpeed 5000 server inventory via the AirSpeed 5000 Remote Console on the Avid Editor.
  - On the Inventory page, select a Destination template for 'Transfer destination of last resort'. This is where the media will reside.
  - On the Inventory page, select a workspace for 'Master Clip Location (team)'. This is where the .aaf clips reside.

- On the Avid Editor (Windows), do the following:
  - Install the application (Media Composer, NewsCutter, or Symphony).
  - Install ISIS Client Manager.
  - Locate the **AvidAirSpeed5000RemoteConsole.zip** file and uncompress it to your desktop.
  - Within the AvidAirSpeed5000RemoteConsole folder, run **Avid AirSpeed Remote Console.exe**.
  - Install Interplay Transfer Client. Make sure to select **Team /Standalone** option.
  - Start the AirSpeed 5000 Remote Console application.
  - Connect to a server.
  - Verify Team Mode is configured properly.

  For more information, see the *AirSpeed 5000 / AirSpeed | 5500 Remote Console Operator's Guide*.
- On the Avid Editor (Macintosh), do the following:
  - Install the application (Media Composer, NewsCutter, or Symphony).
  - Install ISIS Client Manager.
  - Install Interplay Transfer Client.
  - In Transfer settings, set the top server to the name of the machine and enter a workgroup. Type the name of the destination AirSpeed 5000 server as the next server below.

  For more information, see the *AirSpeed 5000 / AirSpeed | 5500 Remote Console Operator's Guide*.

Interplay Production Mode Configuration Requirements

This topic contains information on the requirements necessary when configuring AirSpeed 5000 in an Interplay Production mode.

If configuring for Interplay Production mode, do the following:

- Configure your Avid Service Framework to properly join the Interplay Production environment, as described in the topic "Configuring the Avid Service Framework (for Interplay Production Mode)" on page 18. For additional information, see "Avid Workgroup Properties" in the *Avid Service Framework User's Guide*.
- In the AirSpeed 5000 Management Console on the server, do the following:
  - On the Server Mode page, specify **Interplay Production mode**, and complete the Workgroup information.
  - On the Record Template page, create a Record template that is customized for your needs.
  - On the Destination Template page, create a Destination template that uses a valid workspace on your shared storage. You can set the Clip name and Tape ID if you want.
  - On the Record page, set channel configurations.
  - On the User's page, create users with the same credentials as Interplay users so they will be able to access the AirSpeed 5000 server inventory via the AirSpeed 5000 Remote Console on the Avid Editor.
- On the Avid Editor, do the following:
  - Install your application (Media Composer, NewsCutter, or Symphony).
  - Install ISIS Management Console
  - Configure your Avid Service Framework to properly join the Interplay Production environment, as described in the topic "Configuring the Avid Service Framework (for Interplay Production Mode)" on page 18. For additional information, see "Avid Workgroup Properties" in the *Avid Service Framework User's Guide*.
  - Locate the **AvidAirSpeed5000RemoteConsole.zip** file and uncompress it to your desktop.
  - Within the AvidAirSpeed5000RemoteConsole folder, run **Avid AirSpeed Remote Console.exe**. Make sure to select **Interplay mode** option.
  - Install Interplay Transfer Client.
  - Start the AirSpeed 5000 Remote Console application.
  - Connect to a server.
  - Verify Interplay Production Mode is configured properly.

For more information, see the *AirSpeed 5000 / AirSpeed | 5500 Remote Console Operator's Guide*.

Configuring the Avid Service Framework (for Standalone or Team Mode)

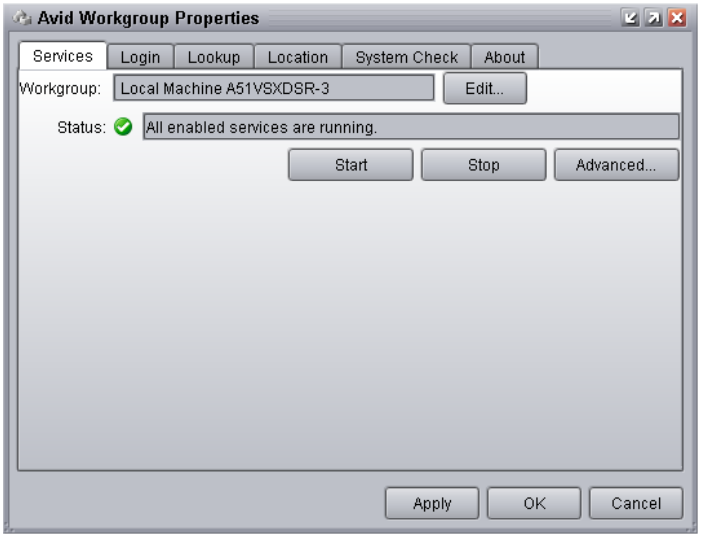
If the AirSpeed 5000 or AirSpeed 5500 server is going to operate in a Standalone or Team environment, the next step is to configure the Avid Service Framework on the server.

This procedure is mostly for diagnostic purposes.

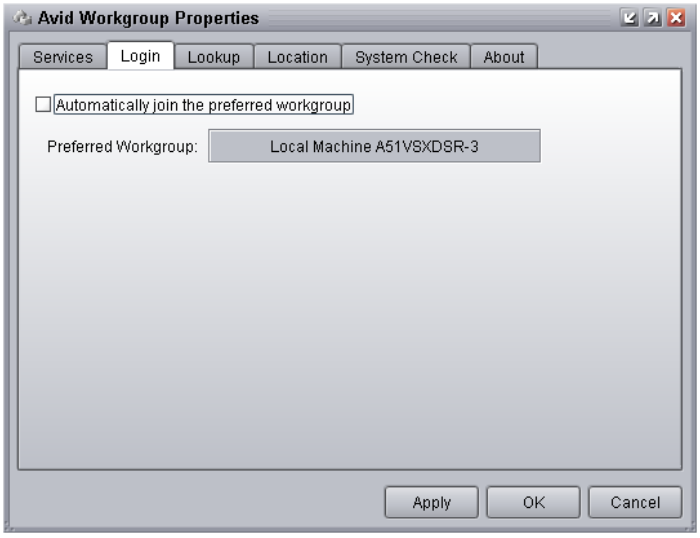
To configure the Avid Service Framework for Standalone or Team mode:

1. On the AirSpeed 5000 or AirSpeed 5500 server, select **Start > All Programs > Avid > Avid Framework > Avid Workgroup Properties**.

   The Avid Workgroup Properties dialog box opens to the Services tab.



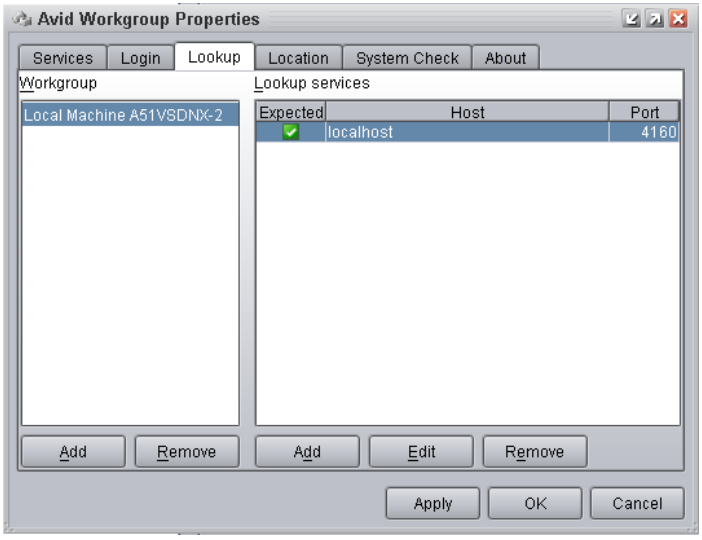
2. Click **Edit**, and type **Local Machine** *[AirSpeed 5000 servername]* in the Preferred Workgroup field.



3. Click the Login tab, and make sure that the “Automatically join the preferred workgroup” option is ***not*** selected.

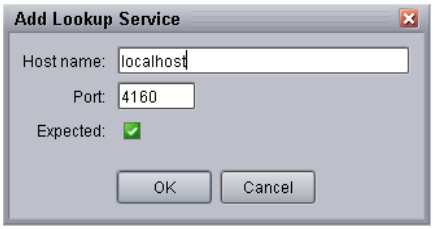
This is so you are prompted to select a Workgroup in the Avid Service Configuration.

4. Click the **Lookup** tab.



5. Do the following to add the workgroup to the list:
   a. Click **Add** in the left pane.
   b. Type **Local Machine** *[AirSpeed 5000 servername]*, and click **OK**.
6. Do the following to add the Lookup service that will be associated with the Workgroup:
   a. In the Workgroup area (left pane), highlight the local machine (server name).
   b. In the Lookup Services area (right pane), click **Add** in the right pane to add a Lookup service.

   The Add Lookup Service dialog box opens.



7. In the Host name field, type **localhost**.
8. Click to select the **Expected** check box, and click **OK** to save the changes, and close the Add Lookup Service dialog box.
9. In the Avid Workgroup Properties dialog box, click **Apply** to restart the services.

   The Restart Avid Services message box opens asking if you want to restart services.
10. Click **Yes** to restart the service.

    The service will be restarted.
11. Click **OK** to close the Avid Workgroup Properties dialog box.
12. Next, if your site uses Avid iNEWS Command, Interplay Capture, or CaptureManager to control AirSpeed 5000 channels for capture or playout, you need to install the AirSpeed Multi Stream Device Service on the AirSpeed 5000 or AirSpeed 5500 server.

    For more information on installing the AirSpeed Multi Stream Device, see the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.

Configuring the Avid Service Framework (for Interplay Production Mode)

When configuring the AirSpeed 5000 or AirSpeed 5500 server for Interplay Production mode, you need to configure your Avid Service Framework to properly join your existing Interplay Production environment using the Avid Workgroup Properties dialog box.

To configure the Avid Service Framework for Interplay Production mode:

1. On the AirSpeed 5000 or AirSpeed 5500 server, select **Start > All Programs > Avid > Avid Framework > Avid Workgroup Properties**.

   The Avid Workgroup Properties dialog box opens to the Services tab.

2. On the Services tab, define the pre-existing Workgroup that the AirSpeed 5000 or AirSpeed 5500 server is going to join.
3. On the Login tab, deselect the “Automatically join the preferred workgroup” checkbox.
4. On the Lookup tab, type the pre-existing Workgroup and Lookup services for the Interplay workgroup that you are joining.

   For more information, see the topic “Avid Workgroup Properties” in the *Avid Service Framework User’s Guide*.

The Login Page

The Login page provides you with the controls you need to navigate to and log in to the AirSpeed 5000 Management Console.

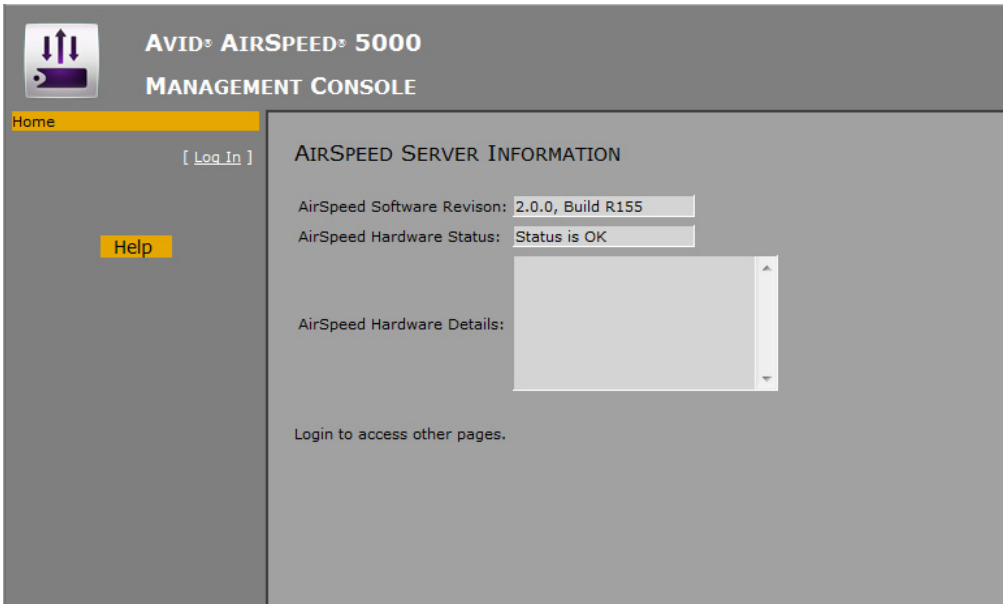
For more information, see “Logging In” on page 19.

Logging In

This topic contains information on how to log into the AirSpeed 5000 Management Console.

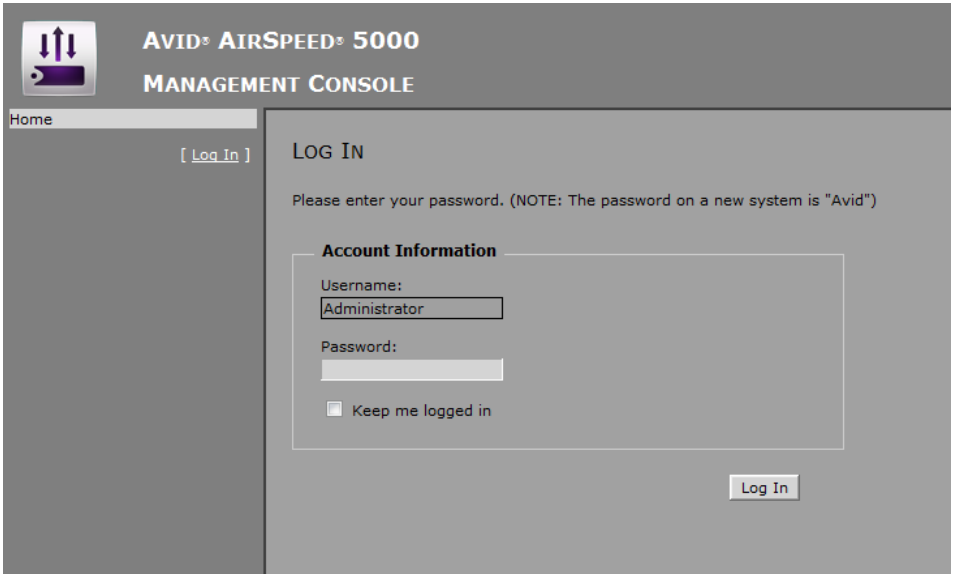
To log into the AirSpeed 5000 Management Console

1. Navigate to the AirSpeed 5000 Management Console for your site.



2. Click **Log In**.

   The Log In Page opens.



3. Type your password in the Password field.

The default password is "Avid".

4. (Option) If you want to remain logged in, click the **Keep me logged in** check box. Selecting this check box will keep you logged in for 48 hours. After 48 hours, you will need to log in again. If you do not select this check box, you will get logged out after 20 minutes of inactivity.
5. Click the **Log In** button.

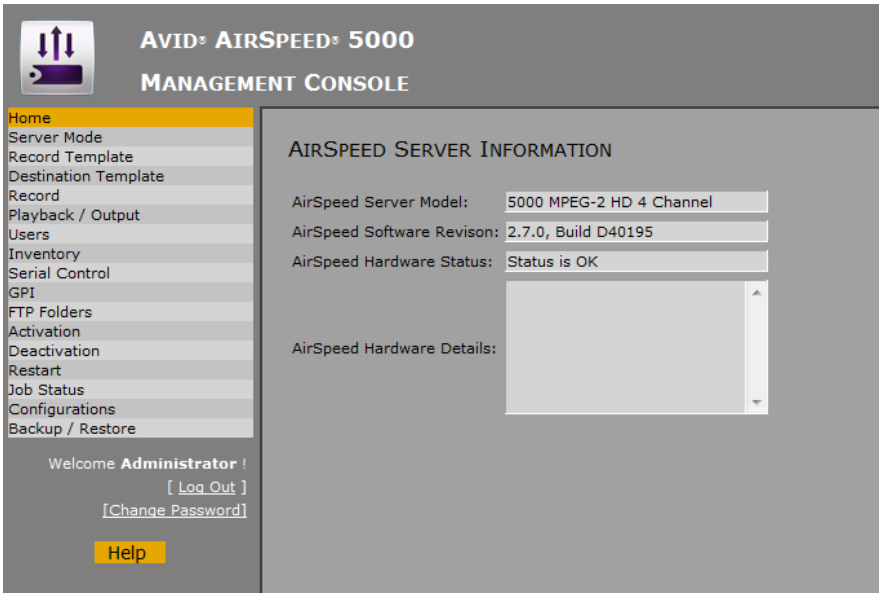
   The Server Information Welcome page opens and displays the following fields:

   - AirSpeed Server Model- This field displays the type of AirSpeed 5000 or AirSpeed 5500 server that you are logged into.
   - AirSpeed Software Revision - This field displays the AirSpeed 5000 software revision that is currently installed on this server.
   - AirSpeed Hardware Status - This field displays the hardware status of this system.

     If your system's hardware is working properly, the message "Status is OK" appears in this field.

     Otherwise, if you see any other message, such as "Status: Not OK", Board1 Not OK", or "Board2 Unavailable", you should do the following:

- Power cycle (full shutdown and restart) your system.
- If available, review the detailed explanation in the AirSpeed Hardware Details field.
- If you still get the message, contact your Customer Support Representative for additional instructions.



6. Do one of the following:

   - If you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, you should click the Server Mode tab, complete the fields, and then move down the tabs, completing each one sequentially. So, to begin configuring your AirSpeed 5000 or AirSpeed 5500 server, select the Server Mode tab and select your Server mode and settings.

     For more information on the pages that you need to complete when configuring the AirSpeed 5000 or AirSpeed 5500 server for the first time, see "Navigating the Management Console" on page 22.

   - If you are performing a maintenance task, such as updating a setting, activating or deactivating a feature, or performing any sort of maintenance or configuration update, you click on the tab that is specific to the task you want to perform.

   For information on determining which page to navigate to in order to perform a task, see "Navigating the Management Console" on page 22.

Navigating the Management Console

This topic contains information on how to navigate to the Management Console page(s) in order to perform a specific administrator task or to troubleshoot a problem.

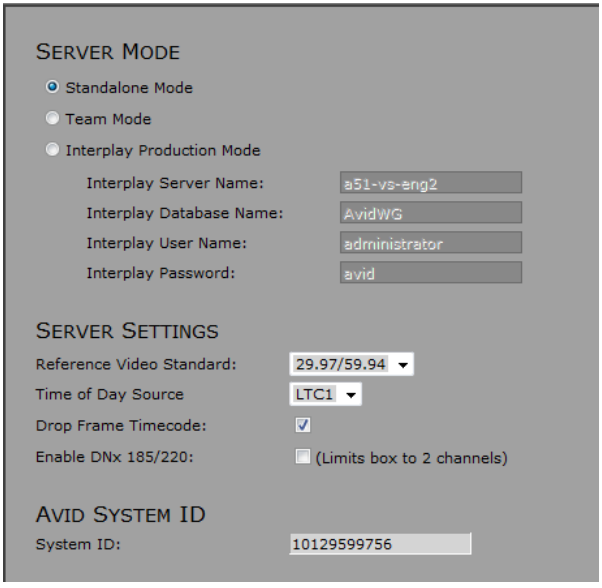
If you want to...	Then, go to the following...
Configure your AirSpeed 5000 or AirSpeed 5500 server for the first time	**Navigate through the following tabs, and complete the information as necessary for your site:** • **Server Mode** tab. The "mode" that you select here dictates some of your configuration requirements. For more information, see "The Server Mode Page" on page 25. • **Record Template** tab. For more information, see "The Record Templates Page" on page 31. • **Destination Template** tab. For more information, see "The Destination Templates Page" on page 40. • **Record** tab. For more information, see "The Record Page" on page 44. • **Playback / Output** tab. For more information, see "The Playback / Output Page" on page 47. • **Users** tab. For more information, see "The Users Page" on page 57. • **Inventory** tab. For more information, see "The Inventory Page" on page 61. • (Optional) **Serial Control** tab. For more information, see "The Serial Control Page" on page 65. • (Optional) **GPI** tab. For more information, see "The GPI Page" on page 66. • (Optional) **FTP Folders** tab. For more information, see "The FTP Folders Page" on page 68.

If you want to...	Then, go to the following...
Configure your system for Record (ingest)	Use the following tabs: • **Record Template** tab. For more information, see "The Server Mode Page" on page 25 • **Destination template** tab. For more information, see "The Server Mode Page" on page 25 • **Record** tab. For more information, see "The Record Page" on page 44. • **(Optional) Serial Control** tab. For more information, see "The Serial Control Page" on page 65. • **(Optional) GPI** tab. For more information, see "The GPI Page" on page 66.
Configure your system for Playout	Use the following tabs: • **Playback / Output** tab. For more information, see "The Playback / Output Page" on page 47 • **(Optional) Serial Control** tab. For more information, see "The Serial Control Page" on page 65. • **(Optional) GPI** tab. For more information, see "The GPI Page" on page 66.
Manage Record templates	**Record Template** tab. For more information, see "The Record Templates Page" on page 31
Manage Destination templates	**Destination Template** tab. For more information, see "The Destination Templates Page" on page 40
Obtain the System ID	**Server Mode** tab. For more information, see "The Server Mode Page" on page 25
Manage AirSpeed 5000 or AirSpeed 5500 Remote Console users	**Users** tab. For more information, see "The Users Page" on page 57
Manage licenses (activate)	**Activation** tab. For more information, see "The Activation Page" on page 74
Deactivate licenses	**Deactivation** tab. For more information, see "The Deactivation Page" on page 77

If you want to...	Then, go to the following...
Manage FTP access	**Users** tab. For more information, see "The Users Page" on page 57.
Work with configurations (Backup new/Restore previously saved)	**Backup / Restore** tab. For more information, see "The Backup / Restore Page" on page 86.
Configure Serial Control settings	**Serial Control** tab For more information, see "The Serial Control Page" on page 65.
Configure GPI or GPO settings	**GPI** tab. For more information, see "The GPI Page" on page 66.
Setup FTP folders to transfer imported or exported MXF OP1A files via FTP	**FTP Folders** tab. For more information, see "The FTP Folders Page" on page 68.
Configure system options	**Inventory** tab. For more information, see "The Inventory Page" on page 61.
Re-transfer media from the AirSpeed 5000 or AirSpeed 5500 server to Shared storage	**Inventory** tab (in the "Transfer destination of last resort" field. For more information, see "The Inventory Page" on page 61.
Manage Auto-deletes	**Inventory** tab. For more information, see "The Inventory Page" on page 61.
View the status of all currently scheduled (running) or completed transfer operations	**Job Status** tab. For more information, see "The Job Status Page" on page 79.

The Server Mode Page

The Server Mode page provides you with the basic controls you need to set up the AirSpeed 5000 or AirSpeed 5500 server.



The following table describes the fields used on the Server Mode page.

Field	Description
SERVER MODE	Based on what has been decided for your site, select the Server Mode for your AirSpeed 5000 or AirSpeed 5500 environment. Select one of the following options: *Based on the mode you select, the available options will be different.* • **Standalone Mode** - In this mode, media is transferred directly between an editor workstation and the AirSpeed 5000 or AirSpeed 5500. Interplay Production is not supported in this configuration and there is no direct transfer of media between the AirSpeed 5000 or AirSpeed 5500 server and shared storage (Avid ISIS). If Standalone mode is selected, you need to perform some specific steps related to Standalone mode configuration. For more information, see "Standalone Mode Configuration Requirements" on page 11. • **Team Mode** - In this mode, media is transferred directly between AirSpeed 5000 or AirSpeed 5500 server and shared storage (Avid ISIS). Interplay Production is not supported in this configuration. If Team mode is selected, you need to perform some specific steps related to Team mode configuration. For more information, see "Team Mode Configuration Requirements" on page 12. • **Interplay Production Mode** - In this mode, AirSpeed 5000 or AirSpeed 5500 is directly integrated with Interplay Production components and media is transferred directly between AirSpeed 5000 or AirSpeed 5500 server and shared storage (Avid ISIS). If Interplay Production mode is selected, you need to perform some specific steps related to Interplay Production mode configuration. For more information, see "Interplay Production Mode Configuration Requirements" on page 14. *If Interplay Production mode is selected, your Avid Service Framework must be configured to properly join the Interplay Production environment using the Avid Workgroup Properties dialog box. For more information, see "Avid Workgroup Properties" in the Avid Service Framework User's Guide.*
- Interplay Server Name	(Interplay Production Mode only) Type the name of your Interplay server.

Field	Description
- Interplay Database Name	(Interplay Production Mode only) Type the name of your Interplay database. The standard database name is **AvidWG**.
- Interplay User Name	(Interplay Production Mode only) Type a user name for the Interplay user. Note the following: • In the Interplay Administration tool, you must create a user with the same name and password. This user must have Read/Write permission to the Interplay folders that the AirSpeed 5000 or AirSpeed 5500 will use for checkin. • In the ISIS Management Console, set up a user with the same password. This user must have Read/Write permission to the appropriate workspaces.
- Interplay Password	(Interplay Production Mode only) Type a password for the Interplay user.
SERVER SETTINGS	These fields enable you to set up the global Server settings for your AirSpeed 5000 or AirSpeed 5500 server.
- Reference Video Standard	Select the Reference video standard that you want to supply to the server from the list. Options are: • 25/50 • 29.97/59.94
- Time of Day Source	Select the LTC input that you are using to drive the Time of Day source. None is selected by default, which uses the PC clock as the Time of Day source. If you are using the Reference and LTC Breakout cable, and not the Multi I/O Expansion Panel to connect your LTC source, you must select LTC 1. *If you set the Time of Day Source to a particular LTC In, and you are supplying an invalid LTC source to that input, the PC clock will be used as Time of Day.* For more information on LTC, see "The Record Page" on page 44.
- Drop Frame Timecode	Select this check box if you will be using Drop Frame timecode. Otherwise, leave it deselected.

Field	Description
- Enable DNx185/220	Select this check box only if you will be recording or playing DNxHD 185/220 in your workflow. Otherwise, leave this option deselected. Selecting this option requires high bandwidth, thus limiting your available channels as follows: • For 4-channel model servers, selecting this option limits you to two channels (CH 1 and CH 2). If you select this option, CH 3 and CH 4 are disabled. *In addition, if this option is selected, Channels 3 and 4 will be unavailable in the AirSpeed 5000 or AirSpeed 5500 Remote Console.* • For 2-channel model servers, selecting this option limits you to one channel (CH 1). *In addition, if this option is selected, Channels 2, 3 and 4 will unavailable in the AirSpeed 5000 or AirSpeed 5500 Remote Console.*
AVID SYSTEM ID	The AVID SYSTEM ID section is for entering and displaying the Avid System ID for the AirSpeed 5000 or AirSpeed 5500 server.
- System ID	Type the Avid System ID. The Avid System ID is the 11-digit number found on one the stickers located on the yellow Avid Service ID card. An Avid System ID sticker might have been placed on your AirSpeed 5000 or AirSpeed 5500 server during system setup. Otherwise, you need to locate the yellow Avid Service ID card that was shipped with your system, and type in the System ID from the card. Once entered, the System ID appears on this page, as well as in the Activation Page, whenever you are activating or deactivating options on your AirSpeed 5000 or AirSpeed 5500 server.

Configuring Your Basic Server Settings

This procedure contains information on how to set up your basic server settings for your AirSpeed 5000 or AirSpeed 5500 server.

To configure basic server settings:

1. In the SERVER MODE area, select the Server mode for your site. Options are:
   - Standalone Mode
   - Team Mode
   - Interplay Production Mode
2. (Option) If you selected Interplay Production Mode as your Server mode, complete the following fields. Otherwise, go to Step 3:
   - In the Interplay Server Name field, type the name of your Interplay server.
   - In the Interplay Database Name field, type the name of your Interplay database.
   - In the Interplay User Name field, type a user name for the Interplay user.
   - In the Interplay Password field, type a password for the Interplay user.
3. In the SERVER SETTINGS area, do the following:
   - Select the Reference Video Standard you want to supply to the server (25/50 or 29.97/59.94).
   - Select the Time of Day Source that you are using.
   - (Option) If you will be using Drop Frame Timecode, select this check box. Otherwise, leave it deselected.
   - (Option) Select the DNxHD 185/220 check box if you will be recording or playing DNxHD 185/220 in your workflow. Otherwise, leave it deselected.

Selecting this option requires high bandwidth, thus limiting your available channels. For more information, see the Server Mode page field descriptions.

4. In the System ID field, type the 11-digit Avid System ID from the AirSpeed 5000 or AirSpeed 5500 server you are configuring.

The System ID is an 11-digit number on a sticker placed on the AirSpeed 5000 or AirSpeed 5500 server. If you do not see the sticker, locate the yellow Avid Service ID card, and type the System ID from one of the stickers on the card.

   Once entered, this number will always display on the Server Mode page, as well as on the Activation page.

5. Click the **Apply** button to accept your changes when you are done.
6. If you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, the next step is to set up Record templates. For more information, see "The Record Templates Page" on page 31.

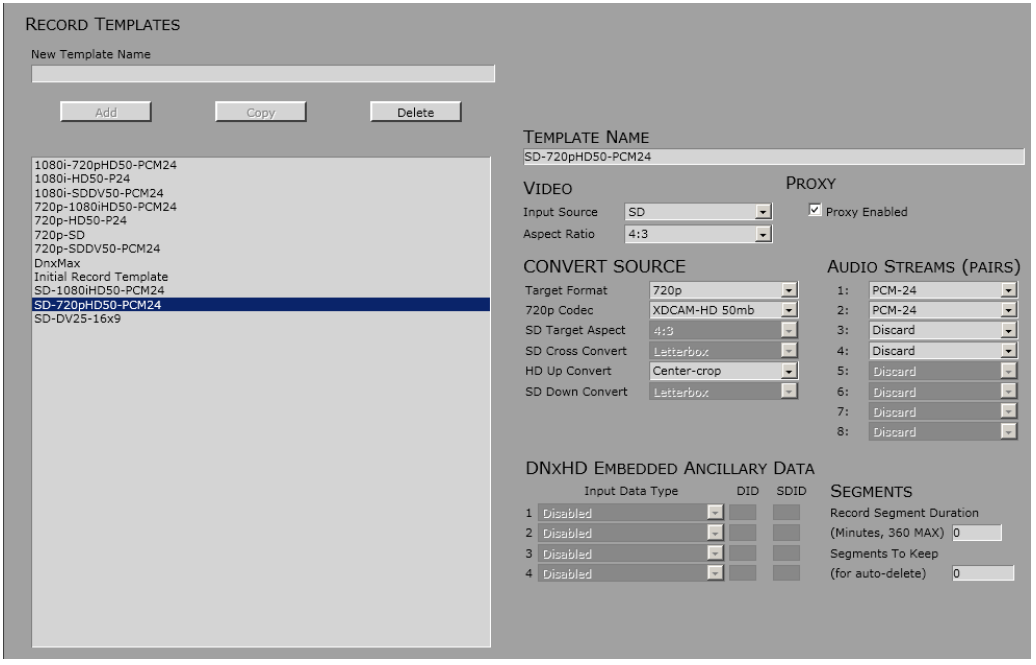
The Record Templates Page

The Record Templates page provides you with the basic controls you need to set up Record templates for the AirSpeed 5000 or AirSpeed 5500 server.

Record templates are used to define the record, proxy, and segment behavior of a channel. Record templates define the video format, conversion format (if any), encoding type, and audio configuration for a channel. When you first begin using the software, you must first create a Record template. Once created, a Record template can be applied to a channel using the Record page.

You can perform the following tasks on the Record Templates page:

- Create a New Record template. For more information, see “Creating a New Record Template” on page 37.
- Copy an existing Record template to use as a base to create another similar Record template. This saves time. For more information, see “Copying an Existing Record Template” on page 38.
- Modify an existing Record template. For more information, see “Modifying an Existing Record Template” on page 39.
- Delete an existing Record template. For more information, see “Deleting a Record Template” on page 39.



The following table describes the fields used on the Record Templates page.

Field	Description
New Template Name	Type the name of a new Record template in this field. Once you type a name in this field, the Add and Copy buttons become enabled. For more information, see the following topics: • "Creating a New Record Template" on page 37 • "Copying an Existing Record Template" on page 38
Record Template List box	Lists the Record templates that have been defined/created on this server.
TEMPLATE NAME	Displays the name of the selected Record template. *You can enter a maximum of 50 characters in this field.*
VIDEO	The Video section enables you to select your Video settings for this Record template.
- Input Source	Select the input source (video standard) that you want this template to have. Options are: • SD • 720p • 1080i *If your AirSpeed 5000 or AirSpeed 5500 server is a base model, you will only be given the SD option.*
- Aspect Ratio	(Option) If this is an SD template, select the aspect ratio. Options are: • 4:3 • 16:9 *If you have selected 1080i or 720p as your video standard, there is no choice. You must use 16:9.*
PROXY	The PROXY section enables you to set up your Proxy settings for this Record template.
- Proxy Enabled	Select this check box if you want to enable proxy records. Otherwise, leave this check box deselected. *You must have the Proxy option activated on your server to have access to this feature. Otherwise, this field is grayed out. For more information, contact your Customer Support representative.*
CONVERT SOURCE	This section enables you to convert the incoming media as it is being recorded. You can also determine various conversion options based on the selected target format.

Field	Description
- Target Format	This field is used to select the target format behavior for the channel. Options and descriptions are as follows: • **No Conversion** - If you select this option, the media will remain the same as the input source. • **SD** - If you select this option, you can record media in an SD format with SD appropriate conversion options available. • **720p** - If you select this option, you can record media in an 720p format with 720p appropriate conversion options available. • **1080i** - If you select this option, you can record media in an 1080i format with 1080i appropriate conversion options available.
- (1080i/720p/SD) Codec	Select the Codec that is associated with this Target Format from the list. *This field name and options change based on the Target Format selected.*
- SD Target Aspect	(Option) If the Target Format is SD, select the aspect ratio. Options are: • 4:3 • 16:9 *If you have selected "No Conversion", 720p, or 1080i as your Target Format, there is no choice. Modifications to this field are only available for SD Target Formats.*

Field	Description
- SD Cross Convert	This field is used when both the Input Source and the Target format are SD, and a cross-convert is desired. Options and descriptions are as follows: For descriptions and examples of the options, see "Overview" on page 216. **SD-Cross-Convert list box options:** • **Letterbox** - If selected when cross-converting a 16:9 SD image to a 4:3 SD image, black bars are placed on the top and bottom of the HD image. • **Pillarbox** - If selected when cross-converting a 4:3 SD image to a 16:9 SD image, black "pillars" are placed on either side of the SD image. • **Center-crop** - If selected when converting a 16:9 SD image to a 4:3 SD output, the left and right sides will be cropped off. If the 16:9 image was a pillarboxed image, the pillars will be removed. If selected when converting a 4:3 SD image to a 16:9 SD output, the top and bottom will be cropped off. If the 4:3 image was a letterboxed image, the black bars will be removed. • **AutoAFD LB** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Letterbox (LB). • **AutoAFD PB** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Pillarbox (PB). • **AutoAFD Crop** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Center-crop (Crop). For information on how this type of automatic conversion works with AirSpeed 5000 or AirSpeed 5500, including examples, see "SD Cross Convert AFD Examples" on page 225

Field	Description
- HD Up Convert	**HD Up Convert list box options:** • **Pillarbox** - If selected when up-converting a 4:3 SD image to a 16:9 HD image, black "pillars" are placed on either side of the HD image. • **Center-crop** - If selected when up-converting a 4:3 SD image that already contains a letterboxed image to a 16:9 HD output, this would remove the black bars from the top and bottom of the image. • **AutoAFD PB** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Pillarbox (PB). • **AutoAFD Crop** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Center-crop (Crop). • **Anamorphic** - If selected when up-converting a 16:9 SD image to a 16:9 HD format, the image would be scaled vertically and horizontally using all pixels (anamorphically). For information on how this type of automatic conversion works with AirSpeed 5000 or AirSpeed 5500, including examples, see "Up Convert AFD Examples" on page 223
- SD Down Convert	**SD Down Convert list box options:** • **Letterbox** - If selected when down-converting a 16:9 HD image to a 4:3 SD image, black bars are placed on the top and bottom of the SD image. • **Anamorphic** - If selected when down-converting a 16:9 HD image to a 16:9 SD format, the image would be scaled vertically and horizontally using all pixels (anamorphically). • **Center-crop** - If selected when down-converting a 16:9 HD image to a 4:3 SD full-screen output, the right and left sides are cropped, and if the image was a pillarboxed image, the pillars are removed. • **AutoAFD LB** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Letterbox (LB). • **AutoAFD Crop** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Center-crop (Crop). For information on how this type of automatic conversion works with AirSpeed 5000 or AirSpeed 5500, including examples, see "Down Convert AFD Examples" on page 224.
AUDIO STREAMS (PAIRS)	Select the type and number of audio streams to capture. Keep in mind the following: • The HD SDI supports a maximum of 8 stereo pairs. • The SD SDI supports a maximum of 4 stereo pairs.

Field	Description
DNxHD EMBEDDED ANCILLARY DATA	This section enables you to select the input data type for the type of ancillary data you want to use. The default is “Disabled”. *To use this feature, you must have purchased and installed the DNxHD codec license option, and have selected a DNxHD codec. For all other codecs, this field is greyed out.* Depending on which option you select, you can also edit the DID (Data Identifier) and SDID (Secondary Data Identifier) fields. The following is a list of available Input Data Types: • Closed Captions (CEA 708) • Closed Captions (CEA 608) • Program Description (DTV) • Active Format Descriptor • Ancillary Time Code (ATC) • Dolby Audio Meta Data • VBI Data • KLV Metadata • Film Codes • UMID • World Sys Teletext Desc. • Subtitling Data Essence • Payload ID • Custom *DNxHD ancillary data does not work correctly for DNxHD 85/100. It is important to note that DNx100 only has a header for field1, whereas DNxHD 145/220, etc. have a header for each field. Therefore, when using 1080i with the DNxHD 100 format specifically, AirSpeed 5000 or AirSpeed 5500 only records ancillary data for field1. Since closed captioning data arrives on both fields, half of it is missing in DNxHD 100 causing unintelligible closed captioning. In certain cases, some monitors will actually ignore (not display) the closed captioning.* *This issue affects ONLY 1080i format, and DNxHD 100 media using the new embedded ancillary data option, not the existing data-track method.*
SEGMENTS	The SEGMENTS section enables you to set up a record segment duration for clips using this Record template.

Field	Description
- Record Segment Duration (Minutes, 360 MAX)	(Option) To break captures into smaller, more manageable segments, type a value in this field to indicate the duration of each segment (in minutes). Otherwise, you can leave the default value of 0 to record one continuous clip (suggested to be no more than 6 hours or 360 minutes). This is called a Continuous Record. Here are some examples using a clip with a 6 hour duration: • If you type 30 in this field, the template would record 12 clips, each with a 30 minute duration. • If you type 12 in this field, the template would record 30 clips, each with a 12 minute duration. *All clips will be automatically transferred to Interplay, unless the A**uto ingest to shared storage /Interplay** setting is deselected in the Destination Templates page.* *If you generate multiple clips using this field, the segmented clips will be captured and checked into Interplay with unique headframes for each segment (clip).*
- Segments To Keep (for auto-delete)	(Option) This feature is best used when the Auto ingest to shared storage/Interplay option is disabled (not selected) in the Destination Templates page. The server will retain the amount of clips defined number in this field. Once that number of segments is reached, the segments will begin deleting from oldest to newest. *If one or more clips are delete-protected, or in use, those segments (or clips) will not be deleted, and the counter will reset.* *If the Auto-ingest to shared storage/Interplay option is enabled (selected), and you are using Delete criteria from the Inventory tab, that Delete criteria may take precedence over any selections made in this field.*

Creating a New Record Template

This procedure contains information on how to create a new Record template.

This method creates a new Record template from scratch.

To create a new Record template:

1. In the New Template Name field, type the name of the new Record template that you want to create. The Add and Copy buttons become enabled.
2. Click the **Add** button to add the new template to the list below.
3. Add detail to your newly named Record template by completing the fields on the screen including any video, audio, proxy, conversion format, DNxHD embedded ancillary data, and/or segments as they apply to this new Record template.
4. Click the **Apply** button to accept your changes when you are done.

5. If you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, the next step is to set up Destination templates. For more information, see "The Destination Templates Page" on page 40.

Copying an Existing Record Template

This procedure contains information on how to quickly create a new Record template by using information contained in an existing Record template. This can be done by copying the existing Record template name, and then changing the name and settings to match how you want the new Record template to appear.

This method of creating a new Record template can save time, as opposed to creating all of your new Record templates from scratch.

To copy a Record template:

1. Select the template name that you want to copy from the list.
2. Type a new name for the template in the New Template Name field.
3. Click the **Copy** button to add the new template to the list below.

   The newly created template will appear in the list with the same video and audio settings as the template you copied it from.
4. Modify the settings on your newly named Record template by completing the fields on the screen as they apply to this new Record template, including any video, audio, proxy, conversion format, DNxHD embedded ancillary data, and/or segments as they would apply to the new Record template you are creating based on an existing one.
5. Click the **Apply** button to accept your changes when you are done.

Modifying an Existing Record Template

This procedure contains information on how to modify the settings in an existing Record template.

To modify an existing Record template:

1. Select the template name that you want to modify from the list.
2. Modify any settings that you want to change, including any video, audio, proxy, conversion format, DNxHD embedded ancillary data, and/or segments for the selected Record template by completing the fields on the screen as they apply to this Record template.
3. Click the **Apply** button to accept your changes when you are done.

Deleting a Record Template

This procedure contains information on how to delete a Record template.

When you delete a Record template, it is removed from the list.

To delete a Record template:

1. Select the name of the Record template that you want to delete from the list.
2. Click the **Delete** button to delete the template from the list below.
3. Click the **Apply** button to accept your changes when you are done.

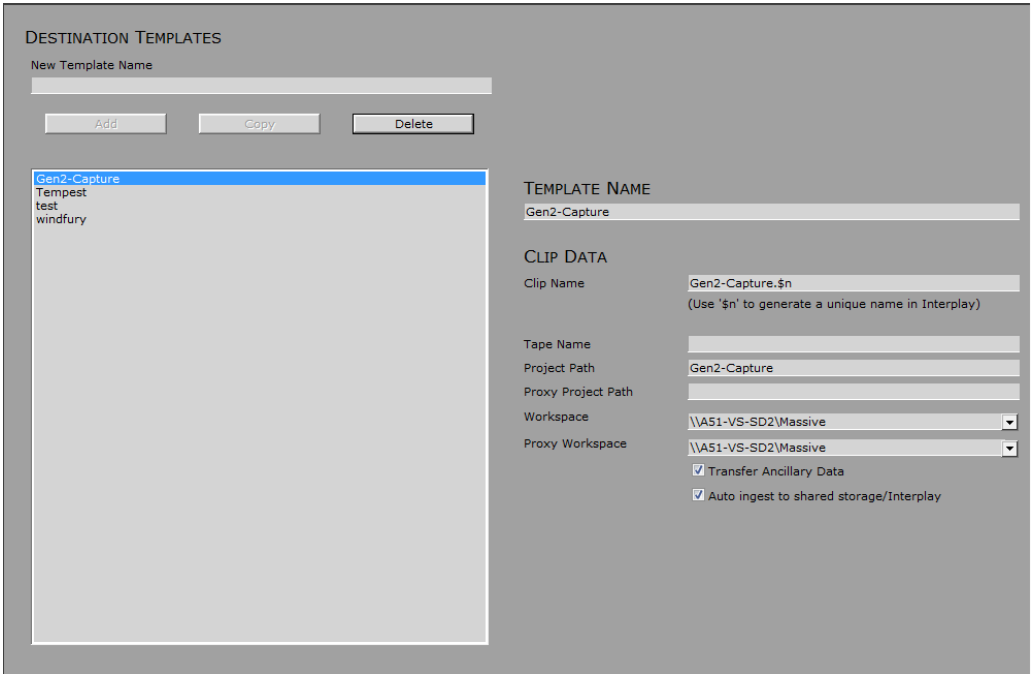
The Destination Templates Page

The Destination Templates page provides you with the basic controls you need to set up Destination templates for the AirSpeed 5000 or AirSpeed 5500 server.

Destination templates are used to define the behavior of the AirSpeed 5000 or AirSpeed 5500 when creating clips, transferring them to shared storage, and checking them into Interplay Production.

A Destination template defines the following:

- The default name to name a clip
- The Interplay Production project to be checked into
- The shared storage workspace to which the media is written



The following table describes the fields used on the Destination Templates page.

Field	Description
New Template Name	Type the name of a new Destination template in this field. Once you type a name in this field, the Add and Copy buttons become enabled. For more information, see the following topics: • "Creating a New Destination Template" on page 42 • "Copying an Existing Destination Template" on page 43
TEMPLATE NAME	Displays the name of the selected Destination template. *You can enter a maximum of 50 characters in this field.*
CLIP DATA	The area where you enter data regarding clips.
- Clip Name	Type the Clip Name. To ensure that you have unique clip names, type **.$n** to the end of the clip name. This generates a unique clip name in Interplay (e.g., clipname**.1**, clipname**.2**, clipname**.3**, etc.) *You can enter a maximum of 80 characters in this field.*
- Tape Name	(Option) If you want provide another piece of metadata for the clip (i.e., to associate the media with a particular tape), you can type in a Tape name in this field. Otherwise, leave this field blank.
- Project Path	The Project Path enables you to type the name of a sub-folder in the Interplay database Projects folder in which to store the ingested clips. This field is optional and is not necessary if you manage ingest through Interplay Capture which overwrites this setting. *When typing the Project path, you do not need to start with a slash (/). The software will add it for you.* *If you do type a slash, it should be a forward slash (/). However, if you accidentally type a backward slash (\), the software will change it to a forward slash (/) for you.* Example: PJK_PROJECT\FROM_AS5K
- Proxy Project Path	In most cases, do not specify a folder in the Proxy Project Path field, because it creates an unnecessary clip. AirSpeed 5000 or AirSpeed 5500 creates metadata in catalogs and incoming media by default.
- Workspace	Specify the workspace from your Shared storage (ISIS 5000 or 7000) in which AirSpeed 5000 or AirSpeed 5500 should store the ingested media. *You must specify a workspace.*
- Proxy Workspace	(Option) If you want to store the high-res media and the H.264 proxy media in different Avid ISIS workspaces, you would select the desired workspace in this field.

Field	Description
- Transfer Ancillary Data	(Option) If selected, the ancillary data track is transferred. If not selected, the ancillary data track is not transferred.
- Auto ingest to shared storage/Interplay	(Option) If selected (default), any recordings using this Destination template will automatically transfer to shared storage/Interplay, and be checked into Interplay, if applicable. If not selected, any recordings using this Destination template will not be transferred to shared storage/Interplay. The recordings will remain on the server if you want to transfer them later. *If not selected, the Auto-delete function will not execute on clips for the channel you are capturing on. It will only delete media that has been successfully transferred to shared storage/Interplay.* **Example:** An example of why you would deselect this option would be for Continuous record. In this mode, AirSpeed 5000 or AirSpeed 5500 is constantly recording, but you do not need to transfer all of the recordings to the Interplay. You can manually transfer only the clips you need.

Creating a New Destination Template

This procedure contains information on how to create a new Destination template.

This method creates a new Destination template from scratch.

To create a new Destination template:

1. In the New Template Name field, type the name for the new Destination template that you are creating.

   The Add and Copy buttons become enabled.

2. Click the **Add** button to add the new template to the list below.
3. Add detail to your newly named Destination template by completing the fields on the screen as they apply to this Destination template.
4. Click the **Apply** button to accept your changes when you are done.
5. If you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, the next step is to set up channels for record. For more information, see "The Record Page" on page 44.

Copying an Existing Destination Template

This procedure contains information on how to quickly create a new Destination template by using information contained in an existing Destination template. This can be done by copying the existing Destination template name, and then changing the name and settings to match how you want the new Destination template to appear.

This method of creating a new Destination template can save time, as opposed to creating all of your new Destination templates from scratch.

To copy a Destination template:

1. Select the template name that you want to copy from the list.
2. Type a new name for the template in the New Template Name field.
3. Click the **Copy** button to add the new template to the list below.

   The newly created template will appear in the list with the same clip data as the template you copied it from.
4. Modify the settings on your newly named Destination template by completing the fields on the screen as they apply to this Destination template.
5. Click the **Apply** button to accept your changes when you are done.

Modifying an Existing Destination Template

This procedure contains information on how to modify the settings in an existing Destination template.

To modify an existing Destination template:

1. Select the template name that you want to modify from the list.
2. Modify any settings that you want to change (i.e., clip data) on the Destination template by completing the fields on the screen as they apply to this Destination template.
3. Click the **Apply** button to accept your changes when you are done.

Deleting a Destination Template

This procedure contains information on how to delete a Destination template.

When you delete a Destination template, it is removed from the list.

To delete a Destination template:

1. Select the name of the Destination template that you want to delete from the list.
2. Click the **Delete** button to delete the template from the list below.

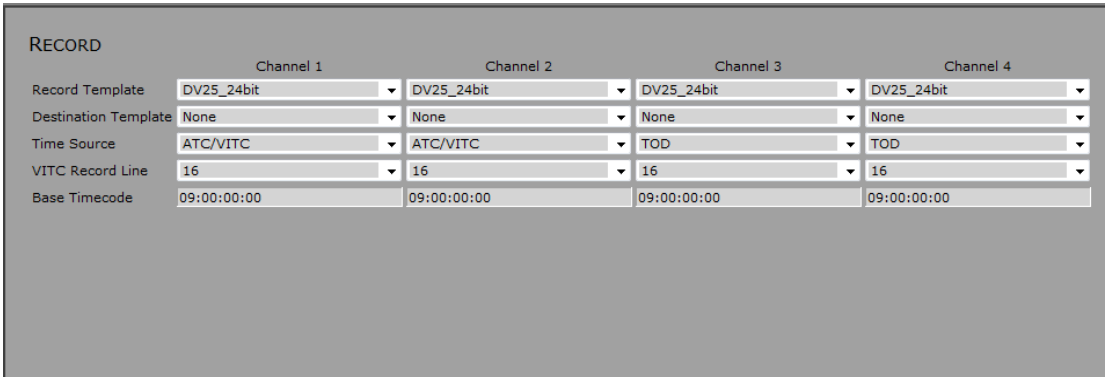
3. Click the **Apply** button to accept your changes when you are done.

The Record Page

The Record page provides you with the basic controls you need to set up channels for record on the AirSpeed 5000 or AirSpeed 5500 server.

The Record page is for configuring the behavior of each channel when recording. The following can be configured for each channel:

- Record templates
- Destination templates
- Time source



The following table describes the fields used on the Record page.

Field	Description
- Record Template	For each channel 1-4, select the Record template that you created in the Record Templates page to apply to each channel. If you change the Record Template, it will be applied to the next Record. *If DNxHD 185/200 has been enabled in the Codec field in the Record Templates page, half the expected number of channels will be available.*
- Destination Template	For each channel 1-4, select the Destination template that you created in the Destination Templates page to apply to each channel. *This field only applies to Interplay Production mode.*
- Time Source	For each channel 1-4, select the Time source from the list. Options are: • ATC/VITC - Select this option if you want to use ATC or VITC for your time code source. *If an invalid ATC/VITC source is supplied to the channel you select, the Timecode will start with a value of "22:22:22:22". Check to make sure your video cable is connected. If you are using VITC, confirm that you are set to the proper VITC Record Line for the video feed.* • Base - This is the Base time code. If you select this option, make sure that you specify the time that you want the records to start in the Base TC field below. • LTC1-LTC4 - Select this option if you are supplying valid LTC source for the individual channel. *If an invalid LTC source is supplied to the channel you select, the Timecode will start with a value of "11:11:11:11". Check to make sure your LTC cable is connected, or confirm that your LTC source meets proper specifications. For more information, see "Specifications" in the AirSpeed 5000 / AirSpeed 5500 Setup Guide.* • TOD - Select this option if you want to use the Time of Day source specified on the Server Mode page. • Force LTC1- Force LTC4 - Select this option if you want to override the timecode source defined in a recording controlled by Capture or Capture Manager. When selected, the AirSpeed 5000 or AirSpeed 5500 will use the LTC present at the channel input on the device and ignore the timecode setting sent by the controller. For example, you would select this option if you wanted to record the inputs from one or more video/LTC sources using multiple AirSpeed 5000 or AirSpeed 5500 channels with Capture or Capture Manager. If the channel is configured for LTC rather than ForceLTC, AirSpeed would only record using the TOD (Time of Day) LTC source. *If an invalid LTC source is supplied to the channel you select, the Timecode will start with a value of "11:11:11:11". Check to make sure your LTC cable is connected, or confirm that your LTC source meets proper specifications. For more information, see "Specifications" in the AirSpeed 5000 / AirSpeed 5500 Setup Guide.*

Field	Description
-VITC Record Line	(Option) For each channel 1-4, if you are capturing VITC, select the VITC record line number that you are supplying the VITC timecode on.
- Base Timecode	(Option) If Base is selected in the Time Source field, type the time that you want the records to start. Use 00:00:00:00 format.

Setting Up Channels for Record

This topic contains information on how to set up channels for record.

To set up channels for record:

1. For each channel, select the option for each of these fields as applicable for your site:
   - Record Template
   - Destination Template
   - Time Source
   - VITC Record Line - (Optional) This field is only necessary if you are capturing VITC.
   - Base TC - (Optional) This field is only necessary if **Base** is selected in the Time Source field.
2. Click the **Apply** button to apply your changes. Remember, you cannot leave the page unless you apply or revert your changes to the previously saved configuration.
3. Next, if you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, you should set up your channels for playback. For more information, see “The Playback / Output Page” on page 47.

The Playback / Output Page

The Playback / Output page is for configuring the playback and output behavior for each channel. Examples of some of these behaviors are:

- End of clip
- Ancillary data output
- VITC line
- Output format

There are two different behaviors for the AutoAFD options. For more information, see “AutoAFD” on page 221.

The following table describes the fields used on the Playback / Output page.

Field	Description
PLAYBACK / OUTPUT	In the PLAYBACK / OUTPUT area, enter the Playback information for each channel.
Channel Name	Type the channel name in the field. Users can toggle the Channel name On or Off in the AirSpeed 5000 or AirSpeed 5500 Remote Console by selecting the **View > Show Channel Names** menu option.
- Show First of Next	For each channel 1-4, that you want to exhibit Show First of Next behavior, do the following: • If the check box is selected, the Show First of Next behavior only takes effect if there is a cued clip at the time of play completion. Note the following: - If there is a cued clip at the time of play completion, the cued clip's first playable frame appears on the Output. - If there is no cued clip at the time of play completion, the currently playing clip will default to what is selected in the drop-down menu, regardless of whether the check box is selected. - For cases where there is no prior clip loaded, the Preset/Cue option can be selected in the Protocol Setup dialog box for VDCP to show the first frame of the next clip. For more information regarding Preset/Cue, see "The Serial Control Page" on page 65. • If the check box is not selected, the first frame of the next clip will not display if there is a cued clip at the time of play completion.
- On End of Clip	Select the behavior that you want this channel to exhibit when playback stops. The following options are available: • Show Last Frame - When selected, and the playing clip stops, the last frame of the clip will be displayed on the Output. • Show Black - When selected, and the playing clip stops, a black frame will be displayed on the Output.
- Output EE When Idle	For each channel 1-4, check this box to output an E-E signal for an idle channel. *The E to E signal that passes through is based on the video standard that is currently set in the Record Templates page and not the Playback page. For example, if the video standard for the Record Template is set to 1080i, the incoming signal on that channel must be 1080i for it to display on output. If the video signal is not 1080i on the input, the output will show black.*
- Output Ancillary Data	For each channel 1-4, check this box to allow the ancillary data to be played out from the AirSpeed 5000 or AirSpeed 5500 server.

Field	Description
- VITC Playback Line	For each channel 1-4, select the VITC playback line number in which you want to output VITC timecode. *For NTSC, VITC playback is supported on Lines 12-19.* *For PAL, VITC playback is supported on Lines 9-22.*
- SD AFD Playback Line	For each channel 1-4, select the SD AFD playback line number in which you want to output SD AFD timecode. *For NTSC, SD AFD playback is supported on Lines 12-19.* *For PAL, SD AFD playback is supported on Lines 9-22.*
- Output Timecode Based on Clip Time	Allows you to use clip time instead of existing data in the video stream. The Time source that you select can affect LTC, ATC, and/or VITC. The behavior is as follows: • When selected, the system will generate output timecode based on the start time associated with the clip. *The actual clip data is not modified by this setting.* • When not selected, the output timecode is based on the original data in the clip.
- Enable Slow Motion	Allows you to enable or disable higher quality playback of slow motion. *You can enable or disable this feature with a clip loaded, allowing you to compare the quality of the slow-motion playback and decide which option is better for your workflow. However, when this option is selected, slow motion will take effect on the **next** clip cued, not the **currently** cued clip.* • When selected, provides higher-quality output when operating in transport speeds less than 1x. With it enabled, a filter is applied to the output to enhance the video output during slower speeds, and potentially improving the overall video quality if needed. • When not selected, the system will simply play the frames at a slower rate.
Output Format Behavior	This field is used to select the output format behavior for the channel. Options and descriptions are as follows: • **1080i/SD/720p** - If you select one of these options, the AirSpeed 5000 or AirSpeed 5500 server will play all clips at the corresponding output format. • **Switch on Fly** - If you select this option, the clip automatically plays in its native format. *Playing clips back-to-back is not supported with the Switch on Fly option. You must unload the clip before cueing the next one.* • **1080i/SD/720p (No UDX)** - If you select one of these options, the AirSpeed 5000 or AirSpeed 5500 server will only play the specified format, and will reject other formats attempted to be played out of the channel. • **SD Output Format (4x3 or 16x9)** - If you select one of these options, the AirSpeed 5000 or AirSpeed 5500 server will play all clips at the corresponding output format.

Field	Description
- SD Cross Convert	This field is used to select the Up/Down/Cross convert options for the channel. Options and descriptions for each type of conversion are as follows: For descriptions and examples of the options, see “Overview” on page 216. **SD-Cross-Convert list box options:** • **Letterbox** - If selected when cross-converting a 16:9 SD image to a 4:3 SD image, black bars are placed on the top and bottom of the HD image. • **Pillarbox** - If selected when cross-converting a 4:3 SD image to a 16:9 SD image, black “pillars” are placed on either side of the SD image. • **Center-crop** - If selected when converting a 16:9 SD image to a 4:3 SD output, the left and right sides will be cropped off. If the 16:9 image was a pillarboxed image, the pillars will be removed. If selected when converting a 4:3 SD image to a 16:9 SD output, the top and bottom will be cropped off. If the 4:3 image was a letterboxed image, the black bars will be removed. • **AutoAFD LB** - If AFD exists in the incoming video, the scaling is “automatic” depending on the AFD code. If no AFD exists, and you select this option, the scaling is Letterbox (LB). • **AutoAFD PB** - If AFD exists in the incoming video, the scaling is “automatic” depending on the AFD code. If no AFD exists, and you select this option, the scaling is Pillarbox (PB). • **AutoAFD Crop** - If AFD exists in the incoming video, the scaling is “automatic” depending on the AFD code. If no AFD exists, and you select this option, the scaling is Center-crop (Crop). For information on how this type of automatic conversion works with AirSpeed 5000 or AirSpeed 5500, including examples, see “SD Cross Convert AFD Examples” on page 225.

Field	Description
- Up Convert	**Up Convert list box options:** • **Pillarbox** - If selected when up-converting a 4:3 SD image to a 16:9 HD image, black "pillars" are placed on either side of the HD image. • **Center-crop** - If selected when up-converting a 4:3 SD image that already contains a letterboxed image to a 16:9 HD output, this would remove the black bars from the top and bottom of the image. • **AutoAFD PB** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Pillarbox (PB). • **AutoAFD Crop** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Center-crop (Crop). • **Anamorphic** - If selected when up-converting a 16:9 SD image to a 16:9 HD format, the image would be scaled vertically and horizontally using all pixels (anamorphically). For information on how this type of automatic conversion works with AirSpeed 5000 or AirSpeed 5500, including examples, see "Up Convert AFD Examples" on page 223.
- Down Convert	**Down Convert list box options:** • **Letterbox** - If selected when down-converting a 16:9 HD image to a 4:3 SD image, black bars are placed on the top and bottom of the SD image. • **Anamorphic** - If selected when down-converting a 16:9 HD image to a 16:9 SD format, the image would be scaled vertically and horizontally using all pixels (anamorphically). • **Center-crop** - If selected when down-converting a 16:9 HD image to a 4:3 SD full-screen output, the right and left sides are cropped, and if the image was a pillarboxed image, the pillars are removed. • **AutoAFD LB** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Letterbox (LB). • **AutoAFD Crop** - If AFD exists in the incoming video, the scaling is "automatic" depending on the AFD code. If no AFD exists, and you select this option, the scaling is Center-crop (Crop). For information on how this type of automatic conversion works with AirSpeed 5000 or AirSpeed 5500, including examples, see "Down Convert AFD Examples" on page 224.

Field	Description
Output Timing	This field is used to adjust the horizontal and vertical output timing of the video relative to the reference signal for each channel. Options and descriptions are as follows: • Lines (+ - Max) - Adjusts the vertical output timing of the video. This is used for more coarse adjustments. • Microseconds (+ - Max)- Adjusts the horizontal output timing of the video. This is used for finer adjustments. *We recommend that you do not adjust these settings while playing video, as it could affect A/V Sync.*
Monitor Output	This field is used to turn on and off the monitor output display for any given channel. Descriptions are as follows: • CG Display - Select **Enabled** to display the monitor output for the channel name below. Or, select **Disabled** to not display monitor output for the channel. Depending on your mode (Capture, Playback or E to E), the display on your monitor will be different. • Channel Name - Displays the name of the channel on the output monitor. You can edit this field. There is a 16 character limit. For more information on what your monitor output would show when turned on based on your current mode, see "Setting the Monitor Output" on page 54.

Setting Up Channels for Playback

This topic contains information on how to set up channels for playback.

To set up channels for playback:

1. For each channel 1-4, select the option for each of these fields as applicable for your site:
2. For each channel 1-4, in the On End of Clip field, select the behavior that you want this channel to exhibit when playback stops (Show Last Frame, Show Black, etc.).
3. For each channel 1-4, select the Output Ancillary Data check box to allow the ancillary data to be played out from the AirSpeed 5000 or AirSpeed 5500 server.
4. For each channel 1-4, select the VITC playback line number that you want to output VITC timecode on.

For NTSC, VITC playback is supported on Lines 12-19.

For PAL, VITC playback is supported on Lines 9-22.

5. The Output Timecode Based on Clip Time field enables you to determine which time source is used to receive output for time information (ATC or VITC) when a clip is played. The behavior is as follows:
   - When selected, the AirSpeed 5000 or AirSpeed 5500 forces the output timecode to follow along from the base time associated with the clip.
   - When not selected, the output timecode is based on the data in the ancillary track.
6. In the Output Format Behavior field, select the output format behavior for the channel. Options and descriptions are as follows:
   - **1080i/NTSC/720p** - If you select one of these options (**1080i**, **NTSC**, or **720p**), AirSpeed 5000 or AirSpeed 5500 will play all clips at the corresponding output format.
   - **Switch on Fly** - If you select this option, the software ignores what the video standard is set to for a given channel, and the video standard for the channel automatically switches to that of the clip that is currently playing in the channel.

Playing clips back-to-back is not supported with the Switch on Fly option. You must unload the clip before cueing the next one.

   - **1080i/SD/720p (No UDX)** - If you select one of these options, the AirSpeed 5000 or AirSpeed 5500 server will only play the specified format, and will reject other formats attempted to be played out of the channel.
   - **SD Output Format (4x3 or 16x9)** - If you select one of these options, the AirSpeed 5000 or AirSpeed 5500 server will play all clips at the corresponding output format.
7. Depending on what option you selected in the Output Format Behavior field, select the conversion options that apply to each channel in the following fields:
   - SD Cross Convert
   - Up Convert
   - Down Convert

Depending on what Output Format Behavior you selected, certain fields might be disabled.

8. (Option) If you want to adjust the horizontal or vertical output timing of the video relative to the reference signal for each channel type your values in the Lines (= - Max) field for coarse vertical adjustments, or in the Microseconds (+ - Max) field for finer horizontal adjustments.
9. (Option) If you want to display the monitor output for a channel, select **Enable** in the Display field. In addition, you can edit the channel name that displays on the monitor output by typing it in the Channel name field.

   For more information, see "Setting the Monitor Output" on page 54.
10. Click the **Apply** button to apply your changes. Remember, you cannot leave the page unless you apply or revert your changes to the previously saved configuration.

11. Next, if you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, you should set up your users and permissions. For more information, see "The Users Page" on page 57.

Setting the Monitor Output

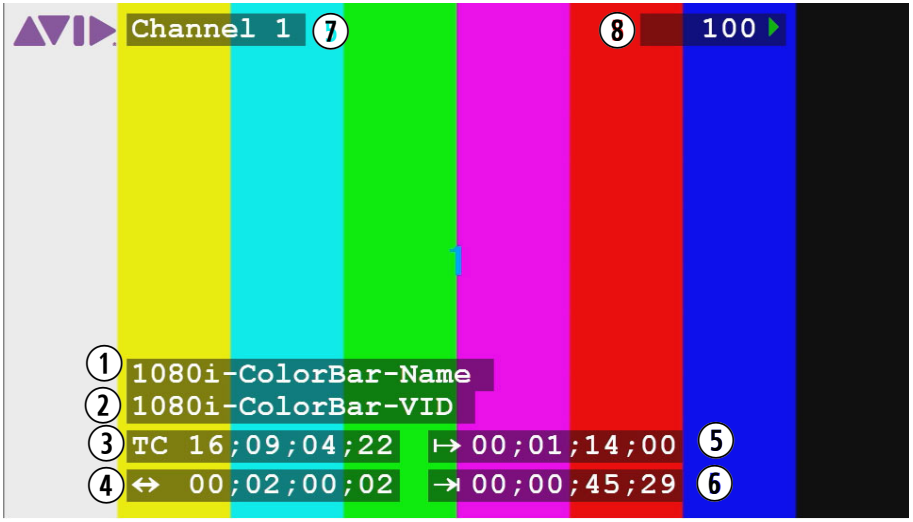
This topic contains information on how to set your monitor output for selected channels. Depending on how you set your monitor output and your mode of operation, the On Screen Display (OSD) appears differently.

If your output format is HD for the channel you select, your monitor display will appear in 16 x 9 format. If it is SD, it will appear in 4 x 3 format.

To set monitor output:

1. For each channel 1-4 that you want to enable monitor output, select **Enabled** in the CG Display field.

   The following is an example of an HD monitor OSD output.



	Field Name	Description
1	Video Name	Displays the Video Name of the clip loaded on the channel. *If the video name is too long for the display, the OSD will display a partial name with "..." at the end.*

	Field Name	Description
2	Video ID	Displays the Video ID of the clip loaded on the channel. *If the video ID is too long for the display, the OSD will display a partial name with "..." at the end.*
3	TC	Displays the current timecode for the clip.
4	Duration	Duration of the clip (from the In point to the Out point).
5	Absolute	The current position in the clip (time elapsed).
6	Remaining	Remaining time in the clip.
7	Channel Name	The name of the channel as specified in the Channel name field.

	Field Name	Description
8	Channel Status	Indicates the current status of this channel. Options include: • Capturing / Cued for Record • Playing • % of Speed. This value to the left of the Playback icon indicates the percentage of speed the clip is currently playing at. *A value of 100 means the clip is playing in real-time. Values of 50 and 33 indicate Slow Motion playback. Values of + or - 200, 400, 800, and 1600 indicate Fast Forward (+) or Fast Reverse (-) speeds that the clip is playing back at.* • Cued for Play/Paused/Stopped

2. (Option) If you want, you can edit the channel name that displays on the monitor output by typing it in the Channel name field. There is a 15 character limit, and can accept ICS characters.
3. (Option) To turn off the monitor output for a given channel, select **Disabled** in the CG Display field.

The Users Page

The Users page is for configuring user access when using AirSpeed 5000 or AirSpeed 5500 Remote Console or FTP. Some behaviors that can be configured on this page are as follows:

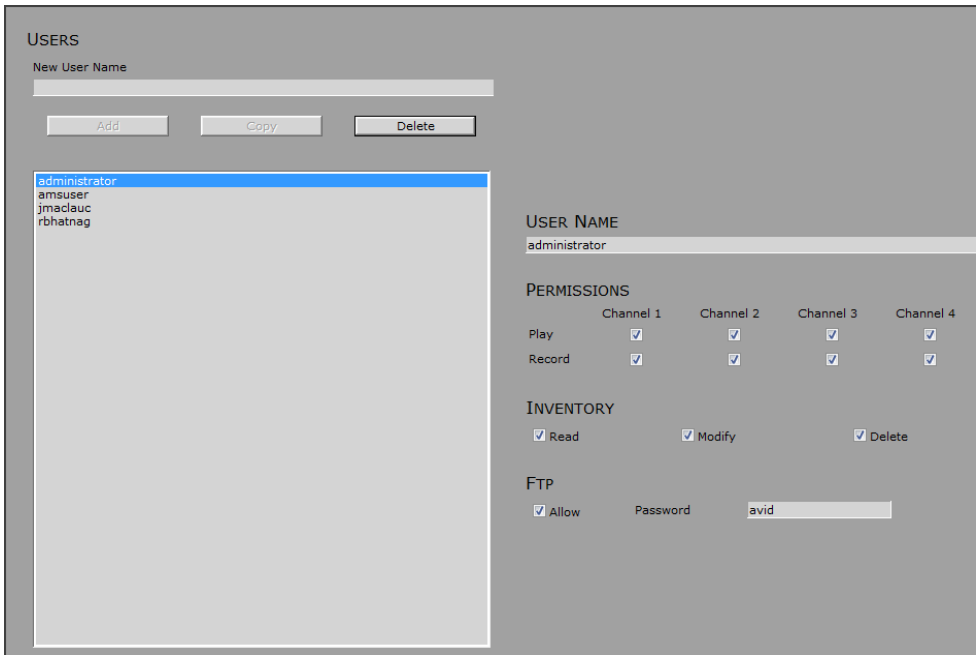
- Select which users can access the system
- Determine the channels users can access
- Define whether the users can Play or Record (or both)
- Enable FTP access for users

Once you create a user, all permissions are enabled by default.

Please note the following regarding creating users on this page:

- If you are running in Interplay Production mode, you must set up user profiles for each user that was created in Interplay. The users you create on this page will have the necessary privileges to administer the AirSpeed 5000 or AirSpeed 5500 with the AirSpeed 5000 or AirSpeed 5500 Remote Console, as well as allow them FTP privileges.
- If you are running in Standalone mode or Team mode, the users you create on this page are the users for logging into the operating system on a remote workstation.
- If the user is not created, they will get an Inventory-only view of the AirSpeed 5000 or AirSpeed 5500 Remote Console.

You must use the exact user and password names. Passwords are case sensitive.



It is important to have the correct (and exact) user names and passwords throughout your AirSpeed 5000 or AirSpeed 5500 environment. For more information on the requirements for implementing user names and passwords in a Standalone environment using a Standalone Transfer Engine, see the *AirSpeed 5000 Remote Console User's Guide*.

The following table describes the fields used on the Users page.

Field	Description
New User Name	If you want to: • Create a New user, see "Creating a New User" on page 59. • Copy an existing User to quickly create a new user with similar permissions, see "Copying an Existing User" on page 60. • Modify an existing user's permissions, see "Modifying User Permissions" on page 60. • Delete a user from the list, see "Deleting a User" on page 61.

Field	Description
ADMINISTRATOR PERMISSIONS	For each channel 1-4, select the Play and Record permissions you want for the selected user. • Play - Enables this user to play media on the selected channel(s). • Record - Enables this user to record media from the selected channel(s). *All of these permissions are enabled by default for all users.*
INVENTORY	Select the inventory privileges that you want this user to have. Options are: • Read - Allows this user to view inventory on the database. • Modify - Allows this user to modify inventory on the database. • Delete - Allows this user to delete inventory from the database.
FTP	(Option) If you want enable this user to have FTP capabilities in their workflow, select the Allow check box. If you select this option, you must also type a user-definable password in the Password field. We do not support the use of “ftp” or “admin” as an FTP username. For more information on FTP guidelines, media file formats, and some tested workflows, see “Using AirSpeed 5000 with FTP” on page 205.

Creating a New User

This procedure contains information on how to create a new user.

This method creates a new user from scratch.

To create a new User:

1. In the New User Name field, type the name of the new user that you want to create.

   The Add and Copy buttons become enabled.

2. Click the **Add** button to add the new user to the list below.

For information on copying a previously created user to use to create other similar looking user permissions, see “Copying an Existing User” on page 60.

3. Add permissions to your newly named user by completing the fields on the screen as they apply to this user.
4. Click the **Apply** button to accept your changes when you are done.
5. If you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, the next step is to configure inventory settings. For more information, see “The Inventory Page” on page 61.

Copying an Existing User

This procedure contains information on how to quickly create a new user by using information contained in an existing user profile. This can be done by copying the existing user name, and then changing the name and permissions to match how you want the new user profile to look.

This method of creating a new user can save time, as opposed to creating all of your new users from scratch.

To copy an existing user:

1. Select the user name that you want to copy from the list.
2. Type a new name for the user in the New User Name field.
3. Click the **Copy** button to add the new user to the list below.

   The newly created user will appear in the list with the same permissions as the user you copied it from.
4. Modify the permissions for your new user by completing the fields on the screen as they apply to this user.
5. Click the **Apply** button to accept your changes when you are done.
6. Next, if you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, you should configure your inventory settings. For more information, see "The Inventory Page" on page 61.

Modifying User Permissions

This procedure contains information on how to modify the permissions for an existing user.

To modify user permissions:

1. Select the user name that you want to modify permissions for from the list.
2. Modify any permissions that you want to change for the selected user by completing the fields on the screen as they apply to this user.
3. Click the **Apply** button to accept your changes when you are done.

Deleting a User

This procedure contains information on how to delete a user.

When you delete a user, it is removed from the list.

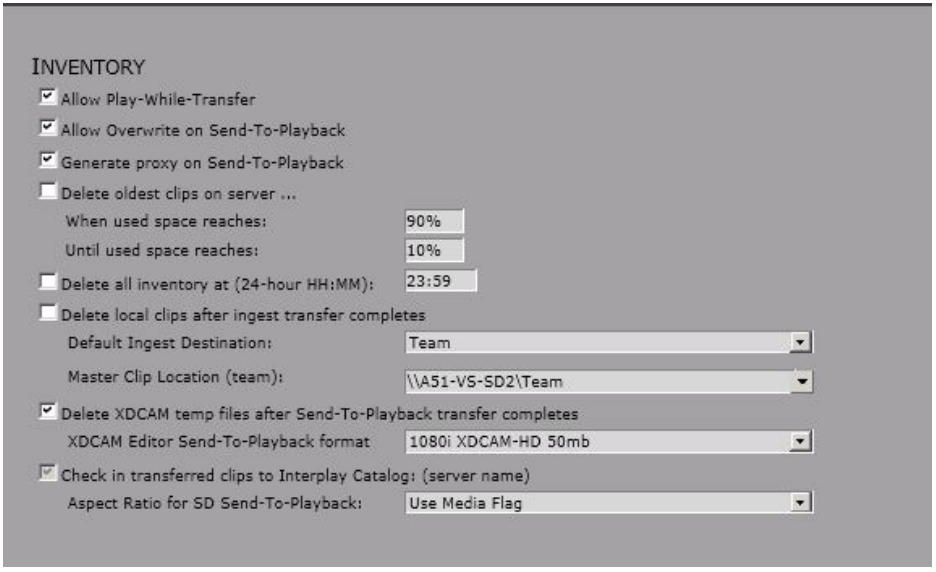
To delete a user:

1. Select the name of the user that you want to delete from the list.
2. Click the **Delete** button. The selected user will be deleted from the list below.
3. Click the **Apply** button to accept your changes when you are done.

The Inventory Page

The Inventory page provides you with the basic controls you need to set up inventory on the AirSpeed 5000 or AirSpeed 5500 server.

Depending on which server mode you are configured in, this page will display either the "Transfer destination of last resort" or "Default Ingest Destination" field. Descriptions of both fields are provided in the following table.



The following table describes the fields used on the Inventory page.

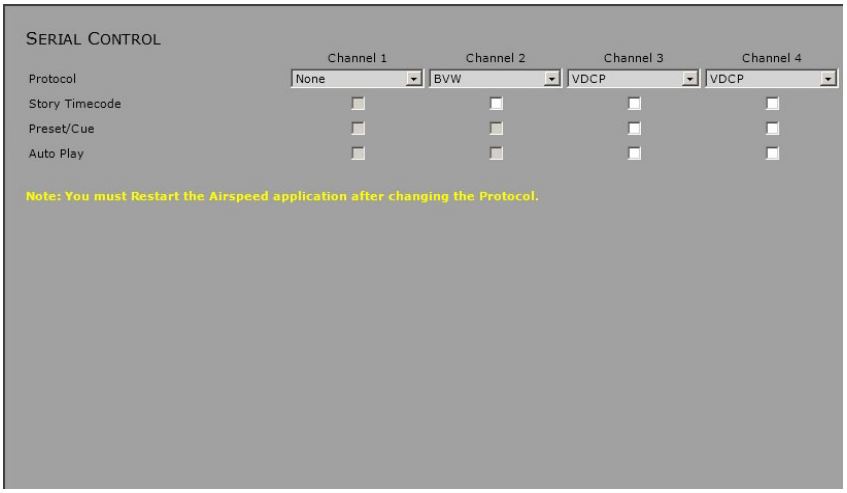
Field	Description
Allow Play-While-Transfer	(Option) If you want to allow Play While Transfer (PWT) functionality, make sure the "**Allow Play-While-Transfer"** check box is enabled. *This option is for Play While Transfer when sending to playback from an editor in a Team or Interplay Production configuration.* *This option does not apply to FTP. FTP will always allow PWT. If this option is deselected, the Play While Transfer selection in the editor will be ignored.*
Allow Overwrite on Send-To-Playback	(Option) If you want to allow for control of the "overwrite" behavior during a Send To Playback (STP) operation, make sure the "**Allow Overwrite on Send-To-Playback**" check box is enabled. This check box is enabled by default and allows editors to overwrite clips on the server when performing STPs. *Overwrites are based on clip names.* When this selection is disabled, an editor will not be able to overwrite a clip that exists on the AirSpeed 5000 or AirSpeed 5500, even when they select the "overwrite" flag in the send-to-playback dialog of the editor. This is to prevent unexpected or unauthorized overwriting of assets on the server. If this is attempted, the transfer will fail with an error saying **"Error: item already exists"**.
Generate Proxy on Send-To-Playback	(Option) If you want to generate a local h.264 proxy after Send-To-Playback transfer completes, click the **"Generate Proxy on Send-To-Playback"** check box. Otherwise, leave it blank.
Delete oldest clips on Server	(Option) If you want to delete the oldest clips on the server, select the check box, and then type a value to indicate the threshold (as a percentage) of when deletion should begin and end. Options are: • **When used space reaches** - Type a value in this field to delete the oldest clips from the server when the used space reaches this threshold. • **Until used space reaches** - Type a value in this field to delete the oldest clips from the server until the used space reaches this threshold. Media will delete starting with the oldest clips first. *Auto-delete will currently only delete clips that have been transferred successfully to shared storage. If a clip has not been transferred, or encountered a transfer error, it will not be Auto-deleted.* *Protected clips will not be deleted.*

Field	Description
Delete all inventory at (24-hour HH:MM)	(Option) If you want to delete all inventory daily, select the "**Delete all inventory at (24 hour HH:MM)"** check box, and enter a time when you want to delete your inventory in hour and minute (HH:MM) format. *Auto-delete will currently only delete clips that have been transferred successfully to shared storage. If a clip has not been transferred, or encountered a transfer error, it will not be Auto-deleted.* *Protected clips will not be deleted.*
Delete local clips after ingest transfer completes	(Option) If you want to delete media after ingest completes, click the **"Delete local clips after ingest transfer completes"** check box. This will only delete media directly off the AirSpeed 5000 or AirSpeed 5500 server. Media transferred onto ISIS and Interplay still resides there after deletion from AirSpeed 5000 or AirSpeed 5500. *Auto-delete will currently only delete clips that have been transferred successfully to shared storage. If a clip has not been transferred, or encountered a transfer error, it will not be Auto-deleted*
Transfer destination of last resort (Interplay Production or Team mode)	For Interplay Production or Standalone modes only) If you are configured in Interplay Production or Standalone mode, select the transfer destination from the list box. *This field is used for drag and drop re-transfers.*
Default Ingest Destination (Team mode only)	For Team mode only) If you are configured in Team mode, this field identifies the Destination template where all of the media files will be transferred. The Editor will need to have read/write access to this field. *When in Team mode and this setting is set to "NONE", you will be unable to perform transfers using drag and drop functionality.*
Master Clip Location (team)	(Option for Team Mode only) If you are configured in Team Mode, you can select the workspace where the Avid master clips folder is generated. Once set, an .AAF file is checked into that location.
Delete XDCAM temp files after Send-To-Playback transfer completes	(Option) To delete XDCAM temporary files after Send-To-Playback transfer completes, select the **"Delete XDCAM temp files after Send-To-Playback transfer completes"** check box. *We recommend that you leave this option enabled. This should only be disabled to troubleshoot XDCAM send to playback problems.*
XDCAM Editor Send-to-playback format	(Option) Select the Send-To-Playback format for the XDCAM Editor.

Field	Description
Check in transferred clips to Interplay Catalog: (server name)	(Option) Allows you to enable or disable catalog checkins to Interplay.
Aspect Ratio for SD Send-To-Playback	Enables you to either leave the default setting, which takes the aspect ratio of the first clip in the sequence, and uses it to set the aspect ratio for the entire sequence, or force Send-to-playback of SD clips into a specific aspect ratio, either 4:3 or 16:9. The following options apply for this item: • **Use Media Flag** - If selected, it will take the aspect ratio of the first clip in the sequence, and set that aspect ratio for the entire sequence. This is the Default setting. • **Force 4:3** - If selected, regardless of the first clip's aspect ratio, it will make all STP clips to the server be 4:3 aspect ratio. • **Force 16:9** - If selected, regardless of the first clip's aspect ratio, it will make all STP clips to the server be 16:9 aspect ratio. Your workflow might include SD media with different aspect ratios. Based on the media content, a clip could end up on the server as either a 4:3 or a 16:9 clip, which may not be desired or provide enough control for playout systems. Depending on your site's configuration, you might decide to have all clips that are sent to the system be either 4:3 or 16:9. This control provides the override to make this consistent. For example, if you are using a combination of actual 16:9 (aspect ratio is defined as 16:9 in the media) and anamorphic 16:9 media (aspect ratio is defined as 4:3 in the media), you could configure the channel formats to either 16:9 or 4:3, and successfully cue and play clips without cross-conversion. Alternately, if the channel is set to 16:9, the STP mode would be set to 16:9, and the media would match the channel output and play properly. The same outcome applies for the 4:3 setting, although the anamorphic output would need to be formatted properly downstream of the outputs. This avoids conflicts where some media might be formatted improperly, and subsequently play out with an incorrect conversion or aspect ratio, depending on the contents of a sequence sent from the Avid Editor.

The Serial Control Page

The Serial Control page provides you with the basic controls you need to set up serial control information (such as VDCP, or BVW75) for Channels 1-4 on the AirSpeed 5000 or AirSpeed 5500 server.



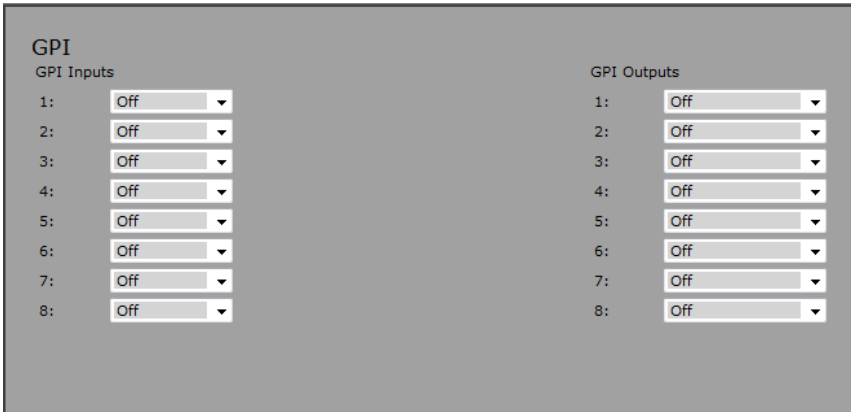
The following table describes the fields used on the Serial Control page.

Field	Description
Protocol	In the Protocol field, select the name of the protocol that you want to use for each channel. Options are: • None (AMS API) • VDCP (LouthSerial) • BVW (Sony) The default protocol is set to None (AMS API). *The Preset/Cue and Auto Play field appear greyed-out out if you select the BVW protocol.*
Story Timecode	(Option) Select this check box for channels that will use story-based timecode values as opposed to using zero-based timecodes.
Preset/Cue	(Option) Selecting this option on a channel will cause the first frame of the cued clip to display on the video output monitor, if there is currently no previously active clip on the output channel.

Field	Description
Auto Play	(Option) Select this option for channels where, following the first VDCP Play command, each new item cued will automatically Take without an explicit PLAY command from Automation. Play ends when there are no longer any cued clips to play out. Under normal VDCP based automation control, this option should be disabled.

The GPI Page

The GPI page provides you with the basic controls you need to set up GPI inputs and outputs on the AirSpeed 5000 or AirSpeed 5500 server.



The following table describes the fields used on the GPI page.

Field	Description
GPI Inputs	(Option) Specify the GPI triggers for your Inputs. GPI Input values are described below: • OFF - If this value is selected, no triggers will work. • Play - If this value is selected, and a clip is loaded on the given channel, it initiates a playback. • Stop - If this value is selected, and if in Playback mode, the clip will stop and eject. However, if in Record mode, the record will be stopped. • Cue - If this value is selected, the currently loaded/playing clip will be recued to the headframe of that clip. To play the clip, you must initiate the Play trigger. If no clip is loaded or playing, this value does nothing. • Record - If this value is selected, and no clip is specified in the channel, it initiates a crash record. However, if a clip is specified, it initiates a record in the channel.
GPI Outputs	(Option) Specify the GPI triggers for your Outputs. GPI Output values are described below: • Off - If this value is selected, the specified tally will not light up. • Server Ready - If this value is selected, it indicates that the AirSpeed 5000 or AirSpeed 5500 is up and available for use. • Play Tally - If this value is selected, it indicates that the AirSpeed 5000 or AirSpeed 5500 is currently playing back a clip on the specified channel. • Record Tally - If this value is selected, it indicates that the AirSpeed 5000 or AirSpeed 5500 is recording a clip on the specified channel.

Setting Up GPI Inputs and Outputs

This procedure contains information on how to set up GPI inputs and outputs on the AirSpeed 5000 or AirSpeed 5500 server.

To set up GPI inputs and outputs:

1. Specify the GPI triggers for your inputs for this AirSpeed 5000 or AirSpeed 5500 server.
2. Specify the GPI triggers for your outputs for this AirSpeed 5000 or AirSpeed 5500 server.
3. Click the **Apply** button to accept your changes when you are done.
4. Next, if you are configuring your AirSpeed 5000 or AirSpeed 5500 server for the first time, you should view your activation status, and set your activation methods. For more information, see “The Activation Page” on page 74.

The FTP Folders Page

The FTP Folders page provides you with the basic controls you need to set up FTP folders and folder options for the AirSpeed 5000 or AirSpeed 5500 server. FTP folders are used to transfer imported or exported MXF OP1A files to and from the server via FTP.

The root directory for FTP files on all AirSpeed 5000 or AirSpeed 5500 servers is on the E: volume (default database/active).

The **active** folder is the root folder for all FTP folders used for FTP transfers to and from the AirSpeed 5000 or AirSpeed 5500 server. Any folders created using the FTP Folders page are created within the **active** folder.

If you connect to the AirSpeed 5000 or AirSpeed 5500 server through a third party FTP Client, you will see an **active** folder path (e.g., **FTP://[SERVER NAME]/active**). Any folders you create will be sub-folders of **active**.

For example, if you create a folder called **clips**, it will be a sub-folder of **active**. Each folder that you create within the **active** folder can have it's own attributes that dictate how clips transferred to this folder behave with regards to import and export functionality. You must not delete the **active** directory.

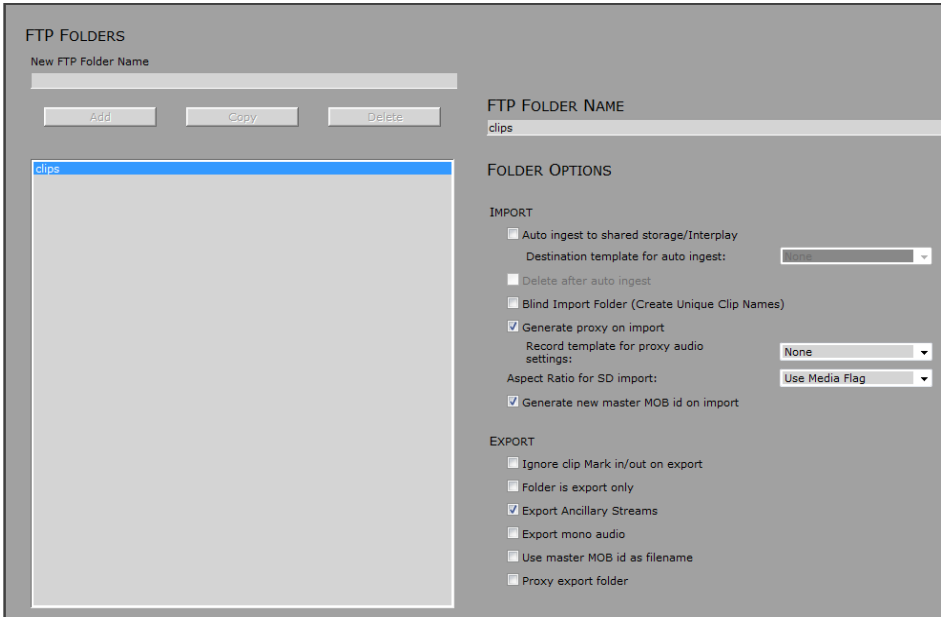
In Interplay Production or Team mode, you can change settings for any folders that are created on the FTP Folders page.

In Standalone mode, you can only select or de-select the "Generate proxy on import" option and the "Transfer ancillary data" option for any folders that are created on the FTP Folders page. All other options are disabled.

The FTP Folders page enables you to create additional FTP folders with the appropriate attributes to suit your needs.

You can perform the following tasks on the FTP Folders Page:

- Create a new FTP folder. For more information, see “Creating a New FTP Folder” on page 72
- Copy an existing FTP folder to use as a base to create another similar FTP folder. This saves time. For more information, see “Copying an Existing FTP Folder” on page 72.
- Modify an existing FTP folder. For more information, see “Modifying an Existing FTP Folder” on page 73.
- Delete an existing FTP folder. For more information, see “Deleting an FTP Folder” on page 73.



The following table describes the fields used on the FTP Folders page.

Depending on what mode you are operating in, and what selections you make, certain options will be enabled or disabled.

Field	Description
New FTP Folder Name	Type the name of a new FTP folder in this field. Once you type a name in this field, the Add and Copy buttons become enabled. For more information, see the following topics: • "Creating a New FTP Folder" on page 72 • "Copying an Existing FTP Folder" on page 72
FTP FOLDER NAME	Displays the name of the selected FTP folder.

Field	Description
FOLDER OPTIONS	Enables you to select the import and export attributes that you want to apply to the selected FTP folder. The following fields are in the IMPORT section: • **Auto-ingest to shared storage/Interplay** - If this value is selected, the file sent via FTP to this folder will be automatically transferred to shared storage and/or Interplay. When this option is selected, the "Destination template for auto ingest" field is enabled. *In Interplay Production mode, there are multiple destination templates to select from.* *In Team mode, there is one global template.* • **Destination template for auto ingest** - Select the Destination template that you want to use for auto ingest. This enables you to choose which workspace (based on the template) you want the auto-ingest to transfer to via Transfer Manager. • **Delete after auto ingest** - If this option is selected, it indicates that the AirSpeed 5000 or AirSpeed 5500 will delete the clip after the clip is transferred to shared storage or Interplay. • **Blind Import Folder (Create Unique Clip Names)** - Blind import sets the clip name to the mxf file name (without the .mxf), and sets the Video ID to the internal id (0_xxx). If this option is selected, when viewing the folder from an FTP client (such as Filezilla, or FlashFXP), you will not see the clips in the folder. They will just pass through to the folder and be given a unique Video ID. • **Generate proxy on import**- If this value is selected, it indicates that the AirSpeed 5000 or AirSpeed 5500 will generate a proxy of the clip upon ingest. If you also have the "Delete after auto-ingest" option enabled, the auto-ingest will happen after the proxy clip is created, and then both clips will transfer to shared storage. When this option is selected, the "Record template for proxy audio settings" field is enabled. • **Record template for proxy audio settings** - Select the Record template that you want to use for your proxy audio settings. It gives you the flexibility to select which audio tracks get compressed (if any) for the proxy. • Aspect Ratio for SD Import - Select the aspect ratio behavior you want to use for the SD import. Options are: - Use Media Flag - Select this option to have media determine the aspect ratio. - Force 4:3 - Select this to always force the aspect ratio to be 4:3. - Force 16:9 - Select this to always force the aspect ratio to be 16:9. • **Generate new master MOB id on import** - Select this check box if you want to generate a new master MOB ID on import.

Field	Description
	The following fields are in the EXPORT section: • **Ignore clip Mark in/out on export**- If this value is selected, it indicates that the AirSpeed 5000 or AirSpeed 5500 will ignore any Mark In or Mark Out points in the clip upon export. • **Folder is export only**- If this value is selected, it indicates that this folder is export only (Read only). You cannot FTP to this folder. • **Export Ancillary Streams** - If this value is selected, it indicates that you want to export ancillary streams in the MXF OP1A file. • **Export mono audio** - If this value is selected, it enables you to export mono audio. • **Use master MOB id as filename** - If this value is selected, it allows you to use existing master MOB information to set the name on the exported file. Some workflows require this. This is an export-only option. Importing files with names longer than 32 characters will result in truncated names due to restrictions on VideoID length, which is defined by the original file name. • **Proxy Export Folder** - Type the name of the folder you are using for proxy export.

Creating a New FTP Folder

This procedure contains information on how to create a new FTP folder.

This method creates a new FTP folder from scratch.

To create a new FTP Folder:

1. In the New FTP Folder Name field, type the name of the new FTP folder that you want to create. The Add and Copy buttons become enabled.
2. Click the **Add** button to add the new FTP folder to the list below.
3. Add detail to your newly named FTP folder by completing the FOLDER OPTIONS section of the page as they apply to this FTP folder.
4. Click the **Apply** button to accept your changes when you are done.

Copying an Existing FTP Folder

This procedure contains information on how to quickly create a new FTP folder by using information contained in an existing FTP folder. This can be done by copying the existing FTP folder name, and then changing the name and settings to match how you want the new FTP folder to appear.

This method of creating a new FTP folder can save time, as opposed to creating all of your new FTP folders from scratch.

To copy an FTP folder:

1. Select the FTP folder name that you want to copy from the list.
2. Type a new name for the FTP folder in the New FTP Folder Name field.
3. Click the **Copy** button to add the new FTP folder to the list below.

   The newly created FTP folder will appear in the list with the same attributes and settings as the FTP folder you copied it from.
4. Modify the FTP folder on your newly named FTP folder by completing the FOLDER OPTIONS section of the page as they apply to this FTP folder.
5. Click the **Apply** button to accept your changes when you are done.

Modifying an Existing FTP Folder

This procedure contains information on how to modify the settings in an existing FTP folder.

To modify an existing FTP folder:

1. Select the FTP folder name that you want to modify from the list.
2. Modify any attributes that you want to change on the FTP folder by completing the FOLDER OPTIONS section of the page as they apply to this FTP folder.
3. Click the **Apply** button to accept your changes when you are done.

Deleting an FTP Folder

This procedure contains information on how to delete an FTP folder.

When you delete an FTP folder, it is removed from the list.

To delete an FTP folder:

1. Select the name of the FTP folder that you want to delete from the list.
2. Click the **Delete** button to delete the FTP folder from the list below.

The Activation Page

The Activation page enables you to view your Activation status (currently active features and options), and to activate additional features and options for your AirSpeed 5000 or AirSpeed 5500 server.

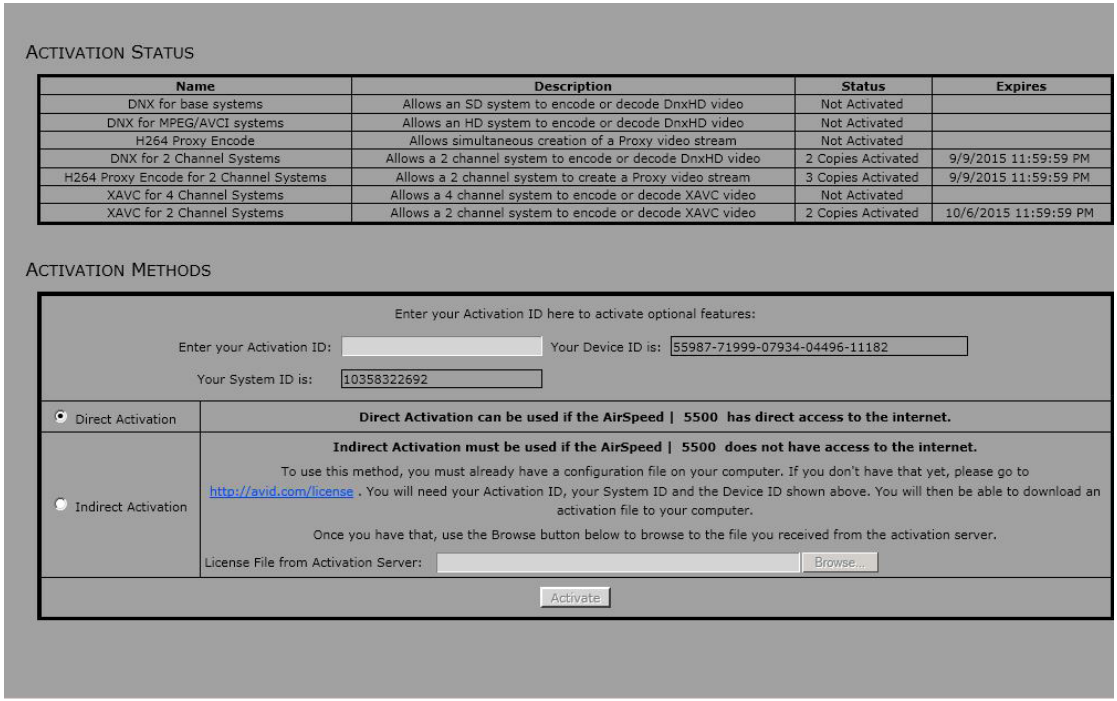
To upgrade your system or options, you must have an Activation ID for the upgrade or option you are requesting.

The Activation ID is a 16 character number that appears on your Avid Entitlement Certificate which will be mailed to you when you purchase an upgrade or option.

If you are unsure what your AirSpeed 5000 or AirSpeed 5500 has for options or licensing, or need to add licensing, it is done here. You will also be able to find your System ID and Device ID here.

If you are activating using the “offline” method, due to being on a private network, or if you have network connection issues, Customer Support will provide a .bin file for you to use when activating your licenses.

If you have any questions, refer to **www.avid.com/avidlicensing**, or contact Avid Customer Support.


ACTIVATION STATUS
Name
Description
Status
Expires
DNX for base systems
Allows an SD system to encode or decode DnxHD video
Not Activated
DNX for MPEG/AVCI systems
Allows an HD system to encode or decode DnxHD video
Not Activated
H264 Proxy Encode
Allows simultaneous creation of a Proxy video stream
Not Activated
DNX for 2 Channel Systems
Allows a 2 channel system to encode or decode DnxHD video
2 Copies Activated
9/9/2015 11:59:59 PM
H264 Proxy Encode for 2 Channel Systems
Allows a 2 channel system to create a Proxy video stream
3 Copies Activated
9/9/2015 11:59:59 PM
XAVC for 4 Channel Systems
Allows a 4 channel system to encode or decode XAVC video
Not Activated
XAVC for 2 Channel Systems
Allows a 2 channel system to encode or decode XAVC video
2 Copies Activated
10/6/2015 11:59:59 PM
ACTIVATION METHODS
Enter your Activation ID here to activate optional features:
Enter your Activation ID:
Your Device ID is:
55987-71999-07934-04496-11182
Your System ID is:
10358322692
Direct Activation
Direct Activation can be used if the AirSpeed | 5500 has direct access to the internet.
Indirect Activation
Indirect Activation must be used if the AirSpeed | 5500 does not have access to the internet.
To use this method, you must already have a configuration file on your computer. If you don't have that yet, please go to
http://avid.com/license . You will need your Activation ID, your System ID and the Device ID shown above. You will then be able to download an activation file to your computer.
Once you have that, use the Browse button below to browse to the file you received from the activation server.
License File from Activation Server:
Browse...
Activate

The following table describes the fields used on the Activation page.

Field	Description
ACTIVATION STATUS	This section lists the status and description of the various features that are active on your AirSpeed 5000 or AirSpeed 5500 server. It also lists the expiration date, if applicable (for trial versions, etc.). In this example, the AirSpeed 5000 or AirSpeed 5500 is activated and licensed to create/record DNxHD, and create H.264 proxy media for dual ingesting low and high res simultaneously. In addition, the XAVC option is activated to encode or decode two channels of XAVC-Intra video. *For the XAVC option to function properly, you must have an AirSpeed 5500 server with MSQ-211 codecs installed. If you have an older AirSpeed 5000, you must upgrade it to include the appropriate hardware.* 'Copies' in the Status field refer to the amount of active transactions supported at once. So, for example, 2 copies of DNxHD support allow for up to 2 channels of DNxHD. The 3 copies of H.264 encoding in this example would allow 2 channels of simultaneous ingest and also a 3rd background transfer could be used to regenerate proxies for clips that do not have one. For example, clips recorded before you licensed the system for proxies will not have them. Also, if you FTP a clip to the server, it will need to have a proxy generated as well. In both cases, the proxy is not generated during recording, since the clip was not recorded on the system originally with proxy enabled.
ACTIVATION METHODS	This section contains information on the Activation methods (Direct and Indirect) used to activate new features or options on your AirSpeed 5000 or AirSpeed 5500 server.

Activating New Features and Options

This procedure contains information on how to activate new features and options for your AirSpeed 5000 or AirSpeed 5500 server. In this procedure, you also need to set your activation methods for this server, depending on whether or not it has Internet access.

The 25-digit Device ID and 11-digit System ID fields will be pre-populated only if you have entered your 11-digit Avid System ID in the Server Mode page.

Depending on your license type (e.g. trial version, etc.), you might have an expiration date.

However, most licenses do not have an expiration date. If your license does have an expiration date, the next time your system is restarted after it expires, your license will be deactivated and that feature or option will not be available. You will need to acquire a new license to regain the feature or functionality.

To activate new features and options:

1. Confirm that your System ID is entered in the Server Mode page. Once entered, it will automatically populate on the Activation page.

   When you enter a valid Activation ID, the Activate button becomes enabled.

2. Select the method by which you want to activate the new feature(s). Options are:

   - **Direct Activation** - Select this option if the AirSpeed 5000 or AirSpeed 5500 server has direct access to the Internet.
   - **Indirect Activation** - Select this option if the AirSpeed 5000 or AirSpeed 5500 server does not have direct access to the Internet, or if a .bin file has been supplied to you by Customer Support. If you select this option, you will get an e-mail containing a .bin file. Copy this file to a folder that is accessible on the AirSpeed 5000 or AirSpeed 5500 server.

If you use the Indirect Activation method, you need to browse to the location where you copied the .bin file.

If the Activation ID is not entered, and/or a .bin file location is not supplied, the Activate button will be disabled.

For more information on what is required, read the text found in the Indirect Activation area on the Activation page.

3. In the Enter your Activation ID field, type your 16 character Activation ID for the upgrade or option you want to activate on this device.

When you enter a valid Activation ID, the Activate button becomes enabled.

4. Click the **Activate** button to activate your new feature(s) or option(s).
5. If you want to view active features, see the Activation Status area. If you want to deactivate a feature, you must use the Deactivation page.

   For more information, see "The Deactivation Page" on page 77.

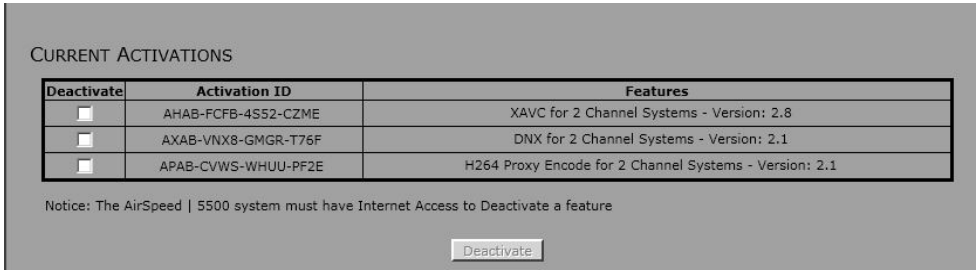
The Deactivation Page

The Deactivation page enables you to view your current activations (active features) and deactivate any currently active features for your AirSpeed 5000 or AirSpeed 5500 server.

Deactivation allows you to ‘move’ a license from one system to another.

A typical workflow would be if a system were to be replaced in the field, or if the entire system were to be re-imaged. In each case you would need to Deactivate the licenses attached to the Device ID to enable it on the same or a different system. The license can be activated only once without deactivation, (i.e. you cannot activate the same license on a different AirSpeed 5000 or AirSpeed 5500 without deactivating first).

If you do want to upgrade your system or options, you must have an Activation ID for the upgrade or option you are requesting. The Activation ID is a 16 character number that appears on your Avid Entitlement Certificate, which will be e-mailed to you when you purchase an upgrade or option.


CURRENT ACTIVATIONS
Deactivate
Activation ID
Features
AHAB-FCFB-4S52-CZME
XAVC for 2 Channel Systems - Version: 2.8
AXAB-VNX8-GMGR-T76F
DNX for 2 Channel Systems - Version: 2.1
APAB-CVWS-WHUU-PF2E
H264 Proxy Encode for 2 Channel Systems - Version: 2.1
Notice: The AirSpeed | 5500 system must have Internet Access to Deactivate a feature
Deactivate

Deactivating Features

This topic contains information on how to deactivate any currently active features or options on the AirSpeed 5000 or AirSpeed 5500 server.

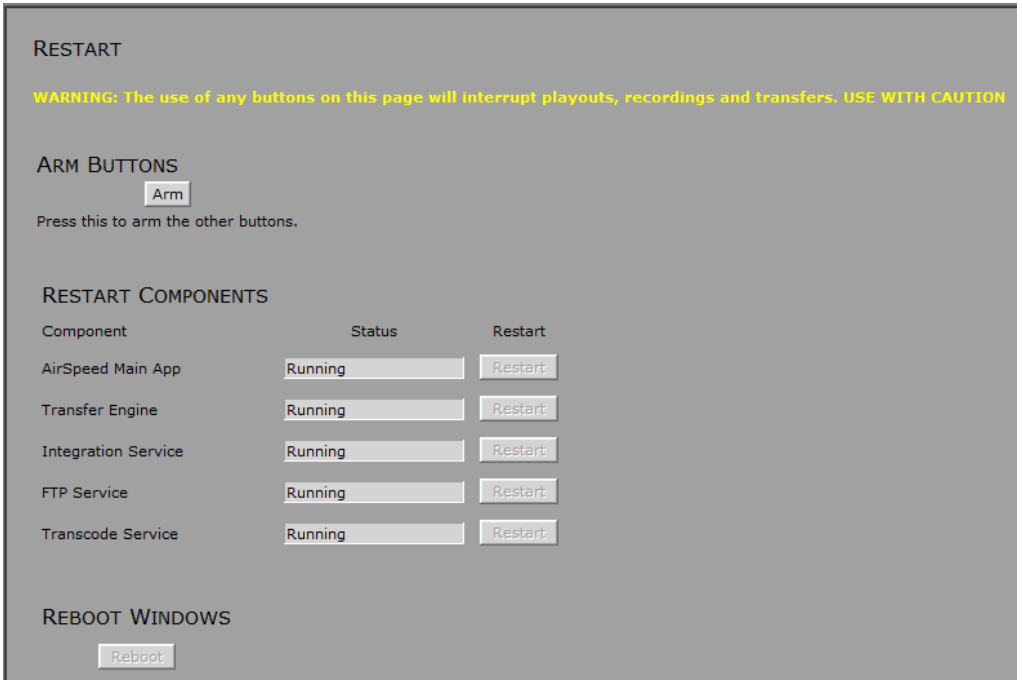
The AirSpeed 5000 or AirSpeed 5500 server must have Internet access to deactivate an active feature or option.

To deactivate features:

1. Select the check box in the Deactivate column next to the feature or option that you want to deactivate.
2. Click the **Deactivate** button. The feature or option will be deactivated and removed from the CURRENT ACTIVATIONS table.

The Restart Page

The Restart page enables you to restart certain software components of the AirSpeed 5000 or AirSpeed 5500 server or the server itself.



Restarting Applications and Services

This topic contains information on how to restart certain AirSpeed 5000 or AirSpeed 5500 applications and services.

To Restart the application:

1. From the Management Console, click the **Restart** tab.

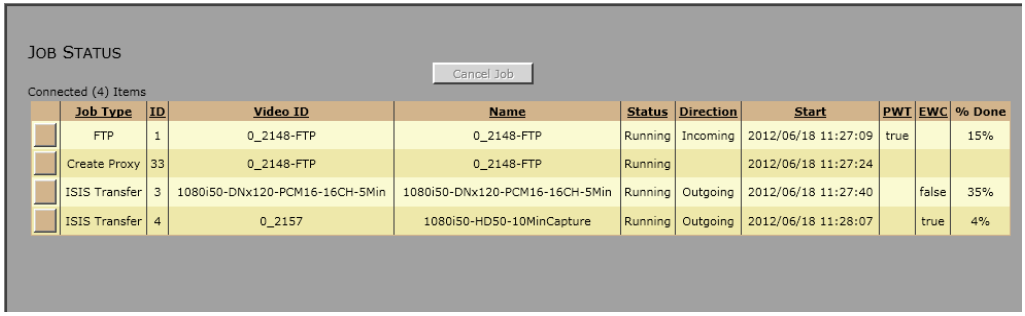
   The Restart Page opens.

2. Click the **Arm** button to enable the other buttons.

3. In the RESTART Components Section, do one of the following:
   - If you need to restart the AirSpeed 5000 or AirSpeed 5500 application, click the **Restart** button next to the AirSpeed Main App component.
   - If you need to restart the Transfer Manager, click the **Restart** button next to the Transfer Engine component.
   - If you need to restart the Integration Service, click the **Restart** button next to the Integration Service component.
   - If you need to restart the FTP Service, click the **Restart** button next to the FTP Service component.
   - If you need to restart the Transcode Service, click the **Restart** button next to the Transcode Service component.
4. If you need to reboot Windows, click the **Reboot** button in the REBOOT WINDOWS section.

The Job Status Page

The Job Status page enables you to view the status of all currently scheduled (running) or completed transfer operations that are currently being run on the AirSpeed 5000 or AirSpeed 5500 server. You also have the ability to cancel any running or pending transfers from this tab one at a time.



Job Type	ID	Video ID	Name	Status	Direction	Start	PWT	EWC	% Done
FTP	1	0_2148-FTP	0_2148-FTP	Running	Incoming	2012/06/18 11:27:09	true		15%
Create Proxy	33	0_2148-FTP	0_2148-FTP	Running		2012/06/18 11:27:24			
ISIS Transfer	3	1080i50-DNx120-PCM16-16CH-5Min	1080i50-DNx120-PCM16-16CH-5Min	Running	Outgoing	2012/06/18 11:27:40		false	35%
ISIS Transfer	4	0_2157	1080i50-HD50-10MinCapture	Running	Outgoing	2012/06/18 11:28:07		true	4%

Field	Description
Job Type	The job type for this operation. Options are: • ISIS Transfer - When selected, Ingest has the outgoing ISIS transfer. Therefore, cancelling this job only affects the ISIS transfer, not the ingest. SendToPlay has the incoming ISIS transfer. Cancelling this job is like cancelling the transfer from Transfer Status window in the Editor. *If there is a Create Proxy job associated with this ISIS transfer, it will also be cancelled.* • FTP Transfer - When selected, the FTP transfer will be cancelled. If there is a Create Proxy job associated with this FTP transfer, it will also be cancelled. • Create Proxy - When selected, the proxy generation will be cancelled, and the clip shown in the AirSpeed 5000 or AirSpeed 5500 Remote Console will have “No Proxy” listed as its Proxy status.
ID	The identification number relating to the Job Type. When viewed with the Job Type, this creates a unique combination.
Video ID	The Video ID of the clip being transferred.
Name	The name of the clip being transferred.
Status	The status for the transfer. Options are: • Running • Pending • Cancelled • Completed
Direction	The direction of the transfer to or from the server. Options are: • Incoming • Outgoing
Start	The start time and date of the transfer.
PWT	Options are: • True - Indicates a Play-While-Transfer, meaning that the clip can be played while it is transferring. • False - Indicates that the clip is not playable while it is transferring.

Field	Description
EWC	Options are: • True - Indicates an Edit While Capture, meaning that the currently capturing clip can be edited in the Editor. • False - Indicates that the currently capturing clip cannot be edited in the Editor while it is being captured.
% Done	The percent complete of the transfer.

Cancelling Transfers

This topic contains information on how to cancel ongoing or pending transfers using the Job Status tab.

To cancel transfers:

1. From the Management Console, click the **Job Status** tab.

   The Job Status Page opens.

2. Select the ongoing or pending job that you want to cancel.

   The row becomes highlighted, and the Cancel Job button becomes enabled.

3. Click the **Cancel Job** button.

   The selected pending or ongoing transfer(s) will be cancelled.

The Configurations Page

The Configurations page enables you to create and save new configurations. This includes templates, and a subset of application settings such as server configuration, record settings and other information. When you load a configuration onto another AirSpeed 5000 or AirSpeed 5500 server (or the same AirSpeed 5000 or AirSpeed 5500 server), it will be added to your configuration list for future use. It will not be automatically activated. You will need to activate it manually.

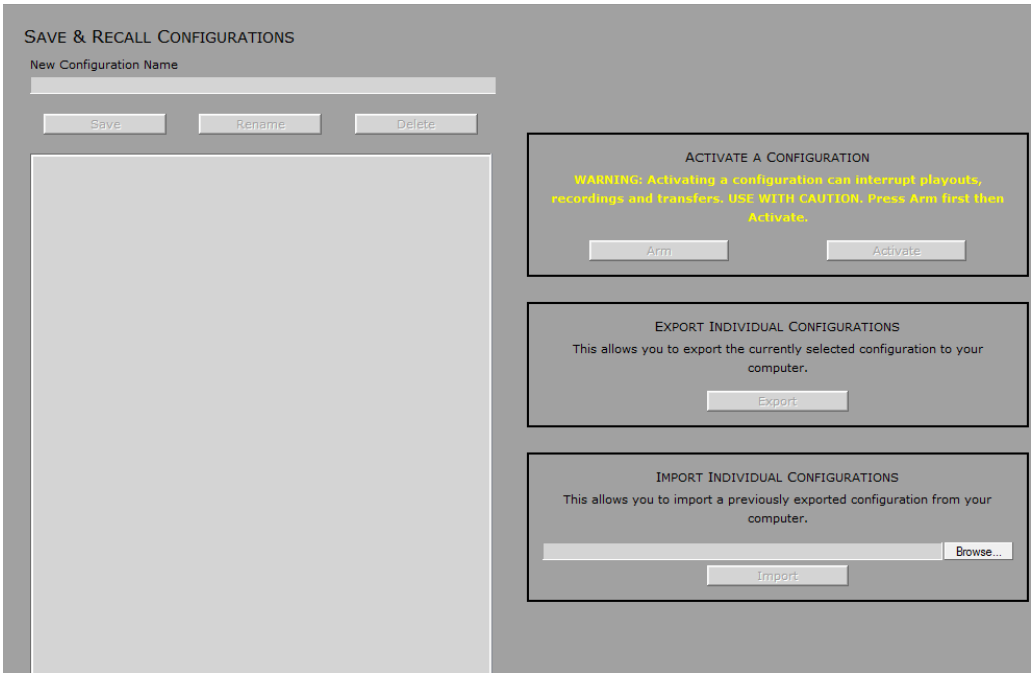
You cannot not save Avid Framework and other system settings from this page. That information can only be saved using the backup and restore system settings on the Backup / Restore page. For more information, see "The Backup / Restore Page" on page 86.

You can also backup and restore application settings for an entire system. Restoring your settings will overwrite existing configurations, apply and activate all settings as required to position the system as a virtual clone of the original backup system. This process does not save items such as hostname, network information, or other OS-level information. This must be done manually before restoration.

These configurations can be considered as the customizations you have made to the AirSpeed 5000 or AirSpeed 5500 as they pertain to your workflow.

In both cases, saving a configuration or backing up and restoring a configuration is done via your web browser. This file is saved to your default download folder or another location specified by your browser. This location is not controlled by the AirSpeed 5000 or AirSpeed 5500. We recommended that you keep these settings separate from the machine.

This procedure does not affect your clip database, nor does it back it up. This is specifically for application settings.


SAVE & RECALL CONFIGURATIONS
New Configuration Name
Save
Rename
Delete
ACTIVATE A CONFIGURATION
WARNING: Activating a configuration can interrupt playouts, recordings and transfers. USE WITH CAUTION. Press Arm first then Activate.
Arm
Activate
EXPORT INDIVIDUAL CONFIGURATIONS
This allows you to export the currently selected configuration to your computer.
Export
IMPORT INDIVIDUAL CONFIGURATIONS
This allows you to import a previously exported configuration from your computer.
Browse...
Import

The Configurations page enables you to do the following:

- "Creating and Saving a Configuration" on page 84
- "Renaming Configurations" on page 84
- "Deleting Configurations" on page 84
- "Activating Configurations" on page 85
- "Exporting Configurations" on page 85
- "Importing Configurations" on page 85

Creating and Saving a Configuration

This topic contains information on how to create and save your current AirSpeed 5000 or AirSpeed 5500 server configuration.

To create and save your current configuration:

- Type the name of your configuration in the New Configuration Name field, and click the **Save** button. The name appears in the list below.

  Once saved, you can select your existing configuration from the list, and click the **Save** button to update the configuration with any changes you might have made.

Renaming Configurations

This topic contains information on how to rename previously saved configurations.

To rename saved system settings:

1. Type the new name for a configuration in the New Configuration Name field.
2. Select the configuration name that you want to rename to the new name from the list.
3. Click the **Rename** button.

   The name of the previously saved configuration will be renamed to the new configuration name.

Deleting Configurations

This topic contains information on how to delete previously saved configurations.

To delete previously saved configurations:

1. Select the configuration that you want to delete.
2. Click the **Delete** button.

   The configuration will be deleted from the list.

Activating Configurations

This topic contains information on how to activate a configuration on a server.

To activate a configuration:

1. Select the saved configuration that you want to activate.
2. Click the **Arm** button.

Activating a configuration can interrupt playouts, recordings and transfers. USE WITH CAUTION.

3. Click the **Activate** button to activate the configuration.

   The configuration will now be the active configuration on this server.

Exporting Configurations

This topic contains information on how to export configurations to be used on another AirSpeed 5000 or AirSpeed 5500 server.

To export configurations:

1. Select the saved configuration that you want to export from the list.
2. Click the **Export** button.

   The configuration will be exported, and will be available for use on another AirSpeed 5000 or AirSpeed 5500 server.

Importing Configurations

This topic contains information on how to import a previously exported configuration from your computer.

To import previously exported configurations:

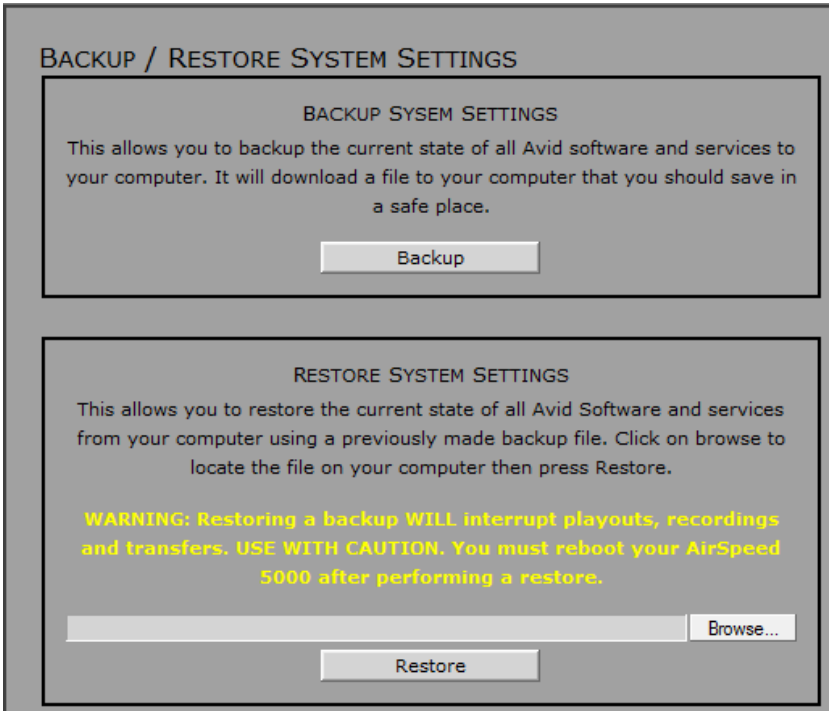
1. Click the **Browse** button, and navigate to the location of the previously exported configuration on your computer.

   The Choose File to Upload dialog box opens.
2. Select the configuration that you want to import, and click the **Open** button.
3. Click the **Import** button to import the configuration.

The Backup / Restore Page

The Backup/ Restore page enables you to backup your current system settings. Once you have backed up your system settings, you can restore any previously saved settings for your AirSpeed 5000 or AirSpeed 5500 server.

You can also delete previously saved system settings.


BACKUP / RESTORE SYSTEM SETTINGS
BACKUP SYSEM SETTINGS
This allows you to backup the current state of all Avid software and services to your computer. It will download a file to your computer that you should save in a safe place.
Backup
RESTORE SYSTEM SETTINGS
This allows you to restore the current state of all Avid Software and services from your computer using a previously made backup file. Click on browse to locate the file on your computer then press Restore.
WARNING: Restoring a backup WILL interrupt playouts, recordings and transfers. USE WITH CAUTION. You must reboot your AirSpeed 5000 after performing a restore.
Browse...
Restore

The Backup / Restore System Settings page enables you to do the following:

- “Backing Up Your Current System Settings” on page 87
- “Restoring Saved System Settings” on page 87
- “Deleting Saved System Settings” on page 87

Backing Up Your Current System Settings

This topic contains information on how to back up your current AirSpeed 5000 or AirSpeed 5500 server system settings.

To backup your current system settings:

1. Click the **Backup** button. You will be asked if you want to open or save the file.
2. Click **Save**, and navigate to the location where you want to save your system settings.
3. In the File name field, type a name for the system settings file and click the **Save** button.

   The System Settings will be saved with the file name you created in the location you chose.

Restoring Saved System Settings

This topic contains information on how to restore previously saved system settings.

To restore saved system settings:

1. In the RESTORE SYSTEM SETTINGS area, click the Browse button to navigate to the location where you saved your previously backed up system settings.
2. Select the saved system settings file that you want to restore.
3. Click the **Restore** button to restore the saved system settings.

Deleting Saved System Settings

This topic contains information on how to delete previously saved system settings files.

To delete previously saved system settings:

1. In the RESTORE SYSTEM SETTINGS area, click the **Browse** button to navigate to the location where you saved your previously backed up system settings.
2. Select the saved system settings file that you want to delete.
3. Click the **Delete** key to delete the file.

Resetting Your Password

We have provided a way to reset your administrator password to login to the AirSpeed 5000 or AirSpeed 5500 Management Console.

An Admin Reset utility can be found at **C:\Program Files\Avid\AirSpeed\SupportUtilities**.

Run this utility on the AirSpeed 5000 or AirSpeed 5500 server to restore in to the factory login. For more information, see the following procedure.

To reset your password:

1. On your AirSpeed 5000 or AirSpeed 5500 server, navigate to **C:\Program Files\Avid\AirSpeed\SupportUtilities**, and double-click on the script.

   The Microsoft SQL Server Management Studio will launch and load the script.

If the Management Studio launches, but does not load the script, you might need to navigate to the script.

2. Connect to “localhost” as the server.
3. Press the **Execute** button to run the script.

   If the script is executed successfully, a message appears at the bottom of the window indicating that the script has been run successfully. Your password has now been reset successfully on the Management Console.

2 Maintaining and Troubleshooting Your Server

This chapter contains some preventative maintenance tasks for your AirSpeed 5000 or AirSpeed 5500 system. There is also a troubleshooting section to help you troubleshoot various problems that might occur. The following topics are included:

- Parts Lists
- Preventative Maintenance
- Troubleshooting Your AirSpeed 5000 or AirSpeed 5500
- Accessing the Knowledge Base

Parts Lists

This section contains the lists of the available parts for your AirSpeed 5000 or AirSpeed 5500 server.

For more information, see the following topics:

- Spares List
- Hardware Upgrade Kits
- Field Replaceable Parts

Contact your Customer Support Representative to order any of these parts or kits.

Spares List

This topic contains information on the parts that can be purchased as spares for your AirSpeed 5000 or AirSpeed 5500 server.

AirSpeed 5000 or AirSpeed 5500 Spares List

Part Name
Media Drive (in Sled)
Operating System (OS) Drive (in Sled)
Power supply module

Hardware Upgrade Kits

This topic contains information regarding AirSpeed 5000 or AirSpeed 5500 server hardware upgrade kits that can be purchased to enhance the hardware capabilities and functionality of your system.

For information on how to upgrade your AirSpeed 5000 or AirSpeed 5500 server hardware, see “Upgrading Your AirSpeed 5000 or AirSpeed | 5500 Server Hardware” on page 177.

AirSpeed 5000 or AirSpeed 5500 Hardware Upgrade Kit List

Upgrade Kit Name
MPEG-2 HD Upgrade Kit (4-channel) (Includes four (4) MPEG-2 HD modules)
AVC-Intra Upgrade Kit (4-channel) (Includes four (4) AVC-Intra modules)
MPEG-2 HD Upgrade Kit (2-channel) (Includes two (2) MPEG-2 HD modules)
AVC-Intra Upgrade Kit (2-channel) (Includes two (2) AVC-Intra modules)

Field Replaceable Parts

This topic contains information regarding AirSpeed 5000 or AirSpeed 5500 server parts that can be replaced in the field.

Contact your Avid Customer Support representative to order any of these parts.

AirSpeed 5000 / AirSpeed 5500 Field Replaceable Parts List

Part Name
Media Drive (in Sled)
Multi I/O Expansion Panel
Operating System (OS) Drive
Power Supply Module
Serial Breakout (DB9) Cable (1)
Reference and LTC Breakout Cable
Multi I/O Expansion (DVI) Cable
Multi I/O Expansion (SCSI) Cable
Video I/O Card
Multi I/O Expansion Card
RAID Card
Chassis Fan
AirSpeed 5000 or AirSpeed 5500 Server Chassis Base (4-channel)
AirSpeed 5000 or AirSpeed 5500 Server Chassis MPEG-2 HD (4-channel)
AirSpeed 5000 or AirSpeed 5500 Server Chassis AVC-Intra (4-channel)
AirSpeed 5000 or AirSpeed 5500 Server Chassis Base (2-channel)
Memory DIMM
Power Cable (2)
AVC-Intra Codec
MPEG-2 HD Codec
Rack Mount Kit (Rails, Clips, and Screws)

Preventative Maintenance

This section contains information on some preventative maintenance tasks to help keep your system healthy.

The following topics are included:

- Setting Up Remote Access to the AirSpeed 5000 or AirSpeed 5500 Server
- Verifying and Changing Media Drive Settings
- Security Best Practices
- Windows 7 Security Update Information
- Viewing System Health Status Information

Setting Up Remote Access to the AirSpeed 5000 or AirSpeed 5500 Server

If you need to remotely access the AirSpeed 5000 or AirSpeed 5500 server from another system, we support the use of the Remote Desktop remote access tool.

To set up remote access to the AirSpeed 5000 or AirSpeed 5500 server:

1. Select the third party remote access tool of your choice.
2. Set up remote access to the AirSpeed 5000 or AirSpeed 5500 server. For more information, see the documentation for your remote access tool (Remote Desktop).

Verifying and Changing Media Drive Settings

This topic contains information on how to verify that the media drive settings on your AirSpeed 5000 or AirSpeed 5500 system display as E:, and how to change them if they are not.

Make sure that all media drives are fully inserted into the front of the server.

To verify media drive settings:

1. Turn on your system.

   The system will begin to startup.
2. When the system starts, log into Windows.
3. Right-click on My Computer, and select **Manage**.

4. In the left pane, select **Disk Management**. If Disk 1 (which includes drives 1-10) appears in the right pane as:
   - **E:**, no further action is required. Go to Step 7.
   - a “Foreign disk”, you need to import it. Go to the next step.
5. Right-click on the foreign disk, and select **Import Foreign Disks...**

   A message appears asking if you are sure you want to import foreign disks.
6. Click **Yes** on any Confirmation dialog boxes that appear. The drives will display the following information:

The E: volume is labelled “Media” by default, but might appear with another name if it has been changed.

If using the Proxy workflow, the E: drive must be configured with Read Only permissions.

   Your media drive will be available with media and databases intact.
7. Do one of the following:
   - If you are configuring for an Interplay Production or Team environment, see “*Installing Shared Storage and Device Service*” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
   - If you are configuring for a Standalone environment, you are ready to install your software.

     For more information, see “*Installing the Software*” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.

Security Best Practices

Security patches must be correctly configured for your AirSpeed 5000 or AirSpeed 5500, or they will cause performance issues depending on the nature of the product. This may mean dropped or missing frames and sluggish command times. The following is recommended:

- Symantec Endpoint protection has been fully tested and qualified for use with AirSpeed 5000.
- Real-time scanning must be disabled.
- Scheduled system scans and updates should not be done while the system is on-air or in use. Manual scans are the most reliable method to avoid affecting system performance.
- All supported critical operating system patches and fixes should be installed as they are qualified by Avid. For more information, see “Windows 7 Security Update Information” on page 94

Windows 7 Security Update Information

Avid qualifies security updates for Microsoft operating systems in coordination with the Microsoft monthly security bulletins. For more information go to the following external facing website for security, please go to the following link:

http://www.avid.com/securityupdate

Viewing System Health Status Information

In the event that you have any issues or failures with the AirSpeed 5000 or AirSpeed 5500 server, use the Avid Health Monitor to view system health status information. The Avid Health Monitor is a good tool to have online when you contact Avid Customer Support.

To access the Avid Health Monitor:

1. Select **Start > All Programs > Avid > Avid Framework > Avid Health Monitor**.

   The Avid Health Monitor dialog box opens.

2. Select your workgroup.
3. In the Hosts column, select the AirSpeed 5000 or AirSpeed 5500 that you want to look at.
4. In the left pane for the selected AirSpeed 5000 or AirSpeed 5500, click the service you want to review. Options are:
   - Integration Service
   - Avid Workstation Service
   - Device Service (Optional)

   Information for the selected service populates in the right pane of the dialog box.
5. Click the down arrow or yellow triangle next to the failed component for the selected service.

   For more information on using the Avid Health Monitor, see the *Avid Service Framework User's Guide*.

Troubleshooting Your AirSpeed 5000 or AirSpeed 5500

This section contains information on how to troubleshoot your AirSpeed 5000 or AirSpeed 5500 server, and add and replace certain hardware components that have failed, including media drives, system drives, fans, and Video I/O boards.

This section contains the following topics:

- "Electrostatic Discharge Precautions" on page 95
- "Proxy Video Requirements" on page 96
- "Working with Media Drives" on page 96
- "Moving an Entire RAID Array to Another Chassis" on page 151
- "Replacing System Drives in the Chassis" on page 157
- "Moving System (OS) and Media Drives to a Different System" on page 160
- "Removing and Replacing the Server Main Cover" on page 161
- "Replacing Power Modules" on page 161
- "Identifying and Replacing Failed Fans" on page 163
- "Identifying and Replacing Failed Video I/O Boards" on page 167
- "Accessing the Knowledge Base" on page 176

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can damage disk drives, cards, and other parts. Avid recommends that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface) on your server when handling parts.

ESD and handling PCIe Cards

Always handle cards carefully. They can be extremely sensitive to ESD. Hold cards only by their edges. After removing a card from its protective wrapper or from the server, place the card component side up on a grounded, static free surface. Use a conductive foam pad if available, but not the card wrapper. Do not slide the card over any surface.

Proxy Video Requirements

If you are having any problems with viewing Proxy video, or the Proxy Viewer, make sure of the following:

- Make sure the E: drive is shared as “Read only”.
- Make sure that the user that you are using on the Remote Client system is also present on the OS level of the AirSpeed 5000 or AirSpeed 5500 server.
- Make sure that the proxy status of the clip in the Remote Console states that a proxy is “Completed”.

Working with Media Drives

This topic contains information on all of the tasks required when working with media drives.

This section contains the following topics:

- “Understanding Media Drive Health and LED Behavior” on page 97
- “Determine Media Drive Health by Viewing LED Status” on page 99
- “Media Drive Operations and Expected LED Behavior” on page 100
- “Handling Foreign Disks” on page 102
- “Using the Avid Health Monitor to Identify Failed Media Drives” on page 102
- “Identifying Failed Media Drives (4-Channel Models)” on page 105
- “Removing and Replacing Media Drives (4-Channel Models)” on page 106
- “Re-RAIDing Media Drives from Scratch (4-Channel Model Servers)” on page 111
- “Identifying Failed Media Drives (2-Channel Models)” on page 132
- “Removing and Replacing Media Drives (2-Channel Models)” on page 133
- “Re-RAIDing Media Drives from Scratch (2-Channel Model Servers)” on page 137

Understanding Media Drive Health and LED Behavior

It is important to understand how to interpret media drive LED behavior on AirSpeed 5000 or AirSpeed 5500 servers, and how it relates to drive status presented in the Avid Health Monitor. Knowing this will help you understand when a media drive is

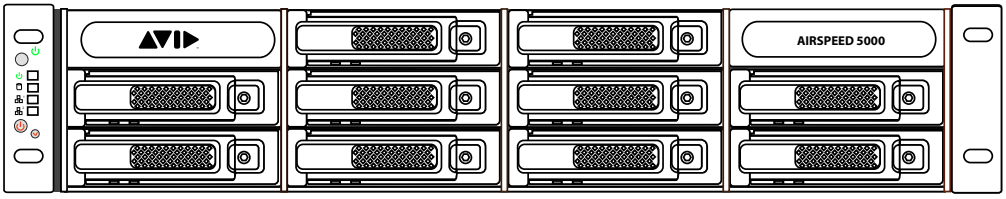
- Completely healthy
- Showing some suspect behavior
- Failed and requires attention

Before you try to replace media drives, you should first understand the various media drive disk states for your system, and how they correspond to the various LED states (flashing Red, solid Blue, and so on).

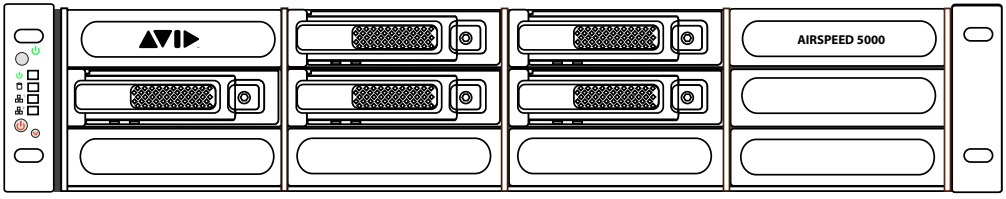
The front of the Avid AirSpeed 5000 or AirSpeed 5500 server provides access to ten (10) media drives for 4-channel model servers. 2 channel models servers contain five (5) media drives. Both models contain activity LEDs, an error LED, and Power and Reset buttons.

Each drive can be locked and unlocked with the use of a key that is provided with your server.

Front of the Server (4-channel models)

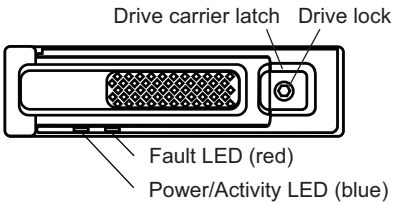


Front of the Server (2-channel models)



Each media drive has a blue and red LED on the bottom front of the drive.

Media Drive Example



- The left Power/Activity LED (blue) is solid when a drive has power and flashes when the drive is in use.
- The right Fault LED (red) is lit when an error is detected, or if the drive is rebuilding or initializing. It flashes fast when it is initializing or rebuilding an array. It flashes slow when there is a suspected problem with the drive.

For information on removing media drives, see one of the following topics (depending on your model):

- “Removing and Replacing Media Drives (4-Channel Models)” on page 106
- “Removing and Replacing Media Drives (2-Channel Models)” on page 133

Determine Media Drive Health by Viewing LED Status

This topic provides information on how to assess the health of your media drives by looking at the LEDs on the front panel of the server. The following table provides some example LED states, corresponding drive states, and required actions.

Media Drive LEDs

Power/Activity (Blue) LED	Fault (Red) LED	Drive State	Action Required
On solid	Off	On-line Inactive - Indicates a healthy online drive, with no disk I/O.	None.
Activity (flashing)	Off	On-line Active - Indicates a healthy online drive, with disk I/O. Also occurs after import initialization when moving a set of configured drives to a different RAID array.	None.
On solid/Activity	Fast flashing	Online Drive in a Failed Span - Indicates the media drive is online, but another media drive in the same span may have failed.	Nothing needs to be done to the flashing online media drives. However, look for a failed (solid Red LED) indicating a failed media drive. If you find one, replace it as soon as possible.
On solid/Activity	One LED on Solid	The drive with the solid Red LED has fully failed and had been removed from the RAID array.	The failed (solid Red LED) media drive should be replaced as soon as possible.
Activity (flashing)	Fast flashing	Data Rebuilding - Indicates the media drive is rebuilding. Occurs when a drive fails.	None.
Activity (flashing)	Fast flashing	Initializing - Indicates the media drive is initializing. Occurs on initial array creation, or when rebuilding.	None.
On solid	Slow flashing	Degraded drive - Can be seen on more than one drive, and on the same or different spans.	You have some time, but you should plan on replacing the suspect drive at your earliest convenience.
On solid	On solid	Failed Data drive - Can be seen on more than one drive, and on the same of different spans.	Replace this media drive.
On solid	Off	Unused disk	None
None	None	Drives are not properly connected.	Remove and reinsert the media drives properly.

For information on removing media drives, see one of the following topics (depending on your model):

- “Removing and Replacing Media Drives (4-Channel Models)” on page 106
- “Removing and Replacing Media Drives (2-Channel Models)” on page 133

Media Drive Operations and Expected LED Behavior

This topic provides information on some examples of some basic operations regarding media drives, that, when performed, cause media drive LEDs to behave (e.g., Turn on, flash, etc.).

Some example media drive operations and expected LED behavior are discussed in the following table:

Examples of Media Drive Operations and Expected LED Behavior

Operation	LED Behavior
Moving a set of configured media drives to a different RAID controller	Before scanning the foreign configuration and importing all the drives, all drives display solid Blue LEDs. After import initialization, the drives display flashing Blue LEDs.
Repairing a drive failed by the LSI MegaRAID controller	The following behaviors are observed during different stages of the process: • Before replacing the failed drive and rebuilding the RAID, the following applies: - With the AirSpeed 5000 application and Transfer Manager running, and with disk access on the “failed” media drive (the drive with “STATE_FAILED”), the drive displays a solid Blue LED, and a slow flashing Red LED. The other nine drives display fast flashing Blue and Red LEDs. - With no AirSpeed 5000 application or Transfer Manager running, and with no disk access on the media drive, all ten media drives display a solid Blue LED; the “STATE_FAILED” drive displays a slow flashing Red LED and the other nine drives display fast flashing Red LEDs. • After replacing the failed media drive, and before the rebuild, the replaced media drive displays a solid blue LED, and no Red LED. • After replacing the missing media drive in the LSI MegaRAID Storage Manager, the replaced media drive displays solid Blue and Red LEDs. • After starting rebuild in the LSI MegaRAID Storage Manager, the replaced drive displays a fast flashing Blue LED and a slow flashing Red LED, the four media drives in the same rebuilding span display fast flashing Blue and Red LEDs. The five drives not in the rebuilding span display solid Blue LEDs and fast flashing Red LEDs.

Examples of Media Drive Operations and Expected LED Behavior (Continued)

Operation	LED Behavior
Repairing two media drives that were failed by the LSI MegaRAID controller (in different spans)	The following behaviors are observed during different stages of the process: • After replacing the two new media drives (in different spans), power on the system, the AirSpeed 5000 application not running, and no disk access on the media drives, you should notice the following: - The two new media drives display solid Blue LEDs, and no Red LEDs. - The remaining eight media drives display fast flashing Blue and Red LEDs. • After "Replacing missing Drive" in the LSI MegRAID Storage Manager, the media drives will appear as follows: - The two new media drives display solid Blue LEDs, and slow flashing Red LEDs. - The remaining eight media drives display solid Blue LEDs, and fast flashing Red LEDs. • After rebuild has started: - The two new media drives display fast flashing Blue LEDs, and slow flashing Red LEDs. - The remaining eight media drives display fast flashing Blue LEDs, and fast flashing Red LEDs.
ReRAIDing media drives from scratch because of multiple disk (media drive) failures on the same span	After replacing two or more (in this case four) media drives in the same span, with the AirSpeed 5000 application and the Transfer Manager not running, and no disk access to media drives, you should notice the following: • After replacing the four failed media drives, you should notice the following: - All ten drives display solid Blue LEDs. - The four replaced drives will have no Red LEDs. - The remaining drives (those not replaced) display fast flashing Red LEDs. • After the configuration is cleared from the LSI MegaRAID Storage Manager, all ten drives display solid Blue LEDs, and no Red LEDs. • After disk initialization is started from the LSI MegaRAID Storage Manager, all ten drives display fast flashing Blue LEDs, and no Red LEDs.

Handling Foreign Disks

When assessing your Media RAID health, you might encounter a Foreign Disk state. This state indicates that the disk was not fully added to the RAID array.

For information on identifying and replacing Media Drives for 4-channel or 2-channel model systems, see the following topics:

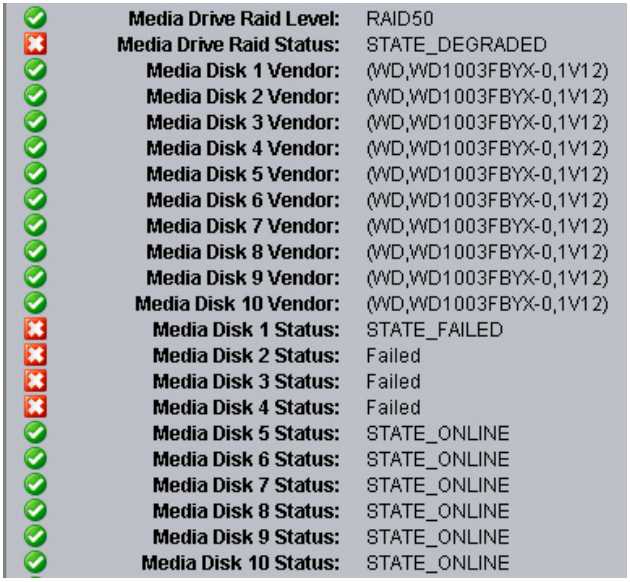
- “Removing and Replacing Media Drives (4-Channel Models)” on page 106
- “Removing and Replacing Media Drives (2-Channel Models)” on page 133

Using the Avid Health Monitor to Identify Failed Media Drives

The Avid Health Monitor is the interface through which AirSpeed 5000 or AirSpeed 5500 uses to detect and report potentially degraded disk performance. The AirSpeed 5000 software periodically measures disk performance in the background, and flags suspect drives before they reach critical failure and are automatically removed from the drive array.

In the event that you have one or more failing or failed media drives, you can replace them. First, you must be able identify which drive(s) has failed.

Below is an example of the Avid Health Monitor showing the Media Drive Raid Status in a STATE_DEGRADED” state, three drives marked as “Failed”, and one drive marked as “STATE_FAILED”.


Media Drive Raid Level: RAID50
Media Drive Raid Status: STATE_DEGRADED
Media Disk 1 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 2 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 3 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 4 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 5 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 6 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 7 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 8 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 9 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 10 Vendor: (WD,WD1003FBYX-0,1V12)
Media Disk 1 Status: STATE_FAILED
Media Disk 2 Status: Failed
Media Disk 3 Status: Failed
Media Disk 4 Status: Failed
Media Disk 5 Status: STATE_ONLINE
Media Disk 6 Status: STATE_ONLINE
Media Disk 7 Status: STATE_ONLINE
Media Disk 8 Status: STATE_ONLINE
Media Disk 9 Status: STATE_ONLINE
Media Disk 10 Status: STATE_ONLINE

Drives that are not performing at a satisfactory level might be at risk of failing. These drives can then be replaced in a controlled manner before causing on-air failure.

In the event that a drive is identified as “Monitoring”, the Health Monitor informs you with a status showing which disk it is monitoring.

If a drive is identified as “Failed” or “FAILED”, the associated LED for that drive on the front of the AirSpeed 5000 or AirSpeed 5500 server may flash Red or appear solid Red.

The Media Drive RAID Status indicates the health or status of the entire media drive RAID array for this server.

Following are possible Media Drive Raid Status indicators and their meanings:

- **STATE_OPTIMAL** - Indicates the Media drive RAID array is healthy and the disks are all operating as expected from the LSI MegaRAID controller.
- **STATE_DEGRADED** - Indicates a problem with one or more media drives in the RAID array from both the LSI MegaRAID controller, and the AirSpeed 5000 application. The RAID is still functioning, however, one or more drives need to be replaced as soon as possible.

In the event of a problem with the Media Drive Raid Status, to help you determine which drive or drives is the potential cause of the problem, the Avid Health Monitor also provides various Media Disk (drive) Status indicators as shown in the following table:

Avid Health Monitor - AirSpeed 5000 Disk Status

Symbol	Media Disk Status	Description	User Action
	STATE_ONLINE	The drive is running at an optimal level of performance. You should only see Blue LEDS (blinking or solid) on the front of the server.	No user action is required.
	MONITORING	The drive is currently being monitored for performance due to a detected event. The is no change in LED behavior. You should only see Blue LEDS (blinking or solid) on the front of the server.	No user action is required.
	Failed or FAILED	The drive has been marked as “Failed” or “FAILED” by the application due to performance, and the Media Drive Raid Status is “STATE_OPTIMAL”. The disk array is still operational, but is at risk of potential failure.	Determine whether this falure requires drive replacement. To do so, refer to “Clearing Media Disk Warnings from the Avid Health Monitor” on page 105. If, after 48 hours, the disk still displays a “Failed” or “FAILED” status, replace this drive with a new media drive as soon as possible.
	STATE_FAILED	The drive has been marked as “STATE_FAILED” by the LSI MegaRAID controller and the AirSpeed 5000 application The “Media Drive Raid Status” field is now displaying a “STATE_DEGRADED” status.	Replace this drive with a new media drive as soon as possible.

For more information on replacing drives, see one of the following topics in the *AirSpeed 5000 / AirSpeed |5500 Administrator’s Guide*:

- For 4-channel model servers, see “Identifying Failed Media Drives (4-Channel Models)”.
- For 2-channel model servers, see “Identifying Failed Media Drives (2-Channel Models)”.

Any disk events are also listed in the Windows Events Log.

For four (4) channel model servers, if you are doing 4 channels of DNxHD 120/145 with proxy, Edit While Capture performance will not be real time if a drive fails, or is offline.

For two (2) channel model servers, if you are doing 2 channels of DNxHD 120/145 with proxy, Edit While Capture performance will not be real time if a drive fails, or is offline.

Clearing Media Disk Warnings from the Avid Health Monitor

For any Media Disk Status that is marked as "FAILED", you can also try to clear the Health Monitor warning.

For information on how to perform this procedure, see the Knowledgebase article called "AirSpeed 5000 | 5500 Clearing Media Disk Warnings from Health Monitor" at **http://avid.force.com/pkb/articles/en_US/compatibility/AirSpeed-5000-5500-Media-Disk-Warnings-via-Health-Monitor**

Identifying Failed Media Drives (4-Channel Models)

This topic contains information on how to identify that your AirSpeed 5000 or AirSpeed 5500 four (4) channel model server has one or more failed media drives.

For a list of media drive LED meanings, see "AirSpeed 5000 or AirSpeed 5500 Front Panel" in the AirSpeed 5000 / AirSpeed 5500 Setup Guide.

To identify failed media drives:

1. Determine if you have a failed media drive by doing the following:
   a. View the Drive status in the Health Monitor. On your AirSpeed 5000 or AirSpeed 5500 server, select **Start > All Programs > Avid > Avid Framework > Avid Health Monitor. Then, select Avid AirSpeed 5000 - Integration Service** (for the AirSpeed 5000 or AirSpeed 5500 server). In the Base Board category, the Media Drive RAID Status field would have a RED x, and would say "STATE_DEGRADED".
   b. View the LEDs on the front of the server. A solid red LED on the front of the drive indicates that the media drive has failed. If it's flashing RED, the drive could be rebuilding the data. If a rebuild has already been initiated, other drives will be flashing RED, and the media drive you need to replace will remain solid RED.

In the event of a failed media drive, it is very important that you replace the failed media drive as soon as possible.

2. Note which drive(s) are failed. If two drives have failed, you must determine whether the two failed drives are on the same span (Span: 0, or Span:1).
   - If you have determined that there is only one failed media drive, you must remove and replace the media drive(s) in the AirSpeed 5000 or AirSpeed 5500 chassis.

     For more information, see "Removing and Replacing Media Drives (4-Channel Models)" on page 106.

- If you have determined that there is more than one failed media drive, and they are on *different* spans (e.g., one failed drive on Span: 0, and one failed drive on Span: 1), you must remove and replace the media drive(s) in the AirSpeed 5000 or AirSpeed 5500 chassis.

  For more information, see "Removing and Replacing Media Drives (4-Channel Models)" on page 106.

- If you have determined that there are two or more failed media drives, and they are on the *same* span (two failed drives on Span: 0, or Span: 1), you will lose your media, and need to re-RAID all of your media drives from scratch. For more information on how to proceed, see "Re-RAIDing Media Drives from Scratch (4-Channel Model Servers)" on page 111.

Removing and Replacing Media Drives (4-Channel Models)

For four (4) channel model servers, when a single media drive fails, or if two media drives fail, but are on different spans (Span 0: and Span: 1), you must remove and replace the media drive(s) in the AirSpeed 5000 or AirSpeed 5500 chassis. To identify which drive has failed, locate the media drive on the front of the server that has both the blue and red LEDs on solid. Once you have identified the failed media drive, you can remove it, and replace it with a new media drive.

Before you perform this procedure, you must take your system off air, as the media disk replacement process can cause possible problems with video playout. Depending on the amount of data, as well as the activity in the disk array, the task of replacing a drive can take a considerable amount of time.

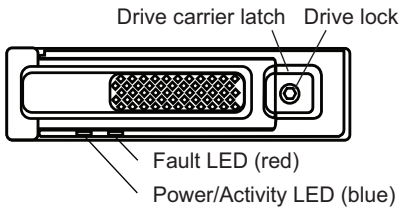
This procedure contains all of the necessary steps for successfully removing and replacing drives from the AirSpeed 5000 or AirSpeed 5500 four (4) channel model server chassis only.

Before you begin this procedure, you should make sure you have one or more spare media drive available. If not, you must obtain replacement drives before proceeding. For more information on ordering spare drives, see "Spares List" on page 90.

To remove and replace media drives:

1. Obtain replacement media drives.
2. Locate the data drive(s) on the front of the AirSpeed 5000 or AirSpeed 5500 server that has both the blue and red LEDs on solid.
3. Remove the drives from the chassis by pushing the button, then pull the handle to unlatch the drive and slide the drive carrier out of the server.
4. Unscrew the old drive from the carrier, noting the holes used for each screw on the carrier.
5. Fasten the new drive into the carrier making sure to line up the four (4) screws with the correct holes in the carrier.

6. Push the drive carrier latch in, to release the handle and pull the handle completely open prior to inserting the drive carrier into the open slot.
7. Make sure the drive LEDs are on the bottom *before* you begin to slide the drive into the server.



***Do not* force a drive into a slot. If you are having problems installing a drive, check to make sure it is level and flat as you insert it into the server, that the drive carrier latch is open and at a 45 degree angle to the drive carrier, and that the LEDs are on the bottom of the drive carrier.**

8. Slide the drive into the open drive slot in the server until it stops. Approximately 1/2 inch of the drive carrier should be outside the server.
9. Push the handle into the drive carrier. This seats the drive in the server. You'll hear a click when the drive is fully seated and the handle latches in place.
10. Select **Start > All Programs > MegaRAID Storage Manager > StartupUI**.

If your AirSpeed 5000 server OS image is later than version 6, it will not have the LSI MegaRAID Storage Manager software pre-installed. Earlier AirSpeed 5000 software versions had this software pre-installed on the server. To get the latest LSI MegaRAID Storage Manager software, it is available to download under LSI's terms and conditions at ***http://www.lsi.com.***

From the website, you can locate and download the latest Windows-based LSI MegaRAID Storage Manager software that supports the MegaRAID SAS 9260 4i product.

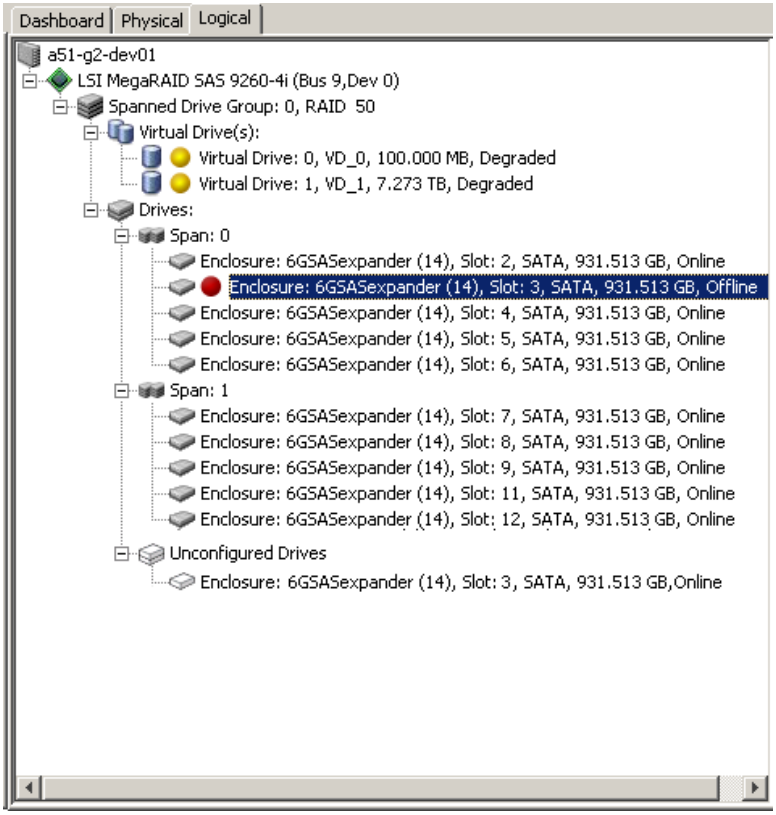
11. Click on the IP address URL link in the IP Address column for the AirSpeed 5000 or AirSpeed 5500 server. The User Name and Password dialog box opens.
12. Log in using the Administrator name **amsuser**, and password **is-admin**.

    Make sure the Login Mode is set to **Full Access**.
13. Click **OK**.

14. Click the **Logical** tab to confirm the location of the failed drive(s), and if more than one drive is failed, confirm that two failed drives are not in the same span, and that the new drives you inserted appear in the Unconfigured Drives tree.

    In the following example, note the following:

    - In the Drives tree, Span 0: has one failed drive (Slot 03).
    - In the Unconfigured Drives tree, the drives in Slot 03 appear there. This means that it is an un-configured media drive, and it is on Span: 0.


Dashboard
Physical
Logical
a51-g2-dev01
LSI MegaRAID SAS 9260-4i (Bus 9,Dev 0)
Spanned Drive Group: 0, RAID 50
Virtual Drive(s):
Virtual Drive: 0, VD_0, 100.000 MB, Degraded
Virtual Drive: 1, VD_1, 7.273 TB, Degraded
Drives:
Span: 0
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 3, SATA, 931.513 GB, Offline
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 6, SATA, 931.513 GB, Online
Span: 1
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 9, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 11, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 12, SATA, 931.513 GB, Online
Unconfigured Drives
Enclosure: 6GSASexpander (14), Slot: 3, SATA, 931.513 GB,Online

15. On your system, note which drive(s) are failed. If two drives have failed, you must determine whether the two failed drives are on the same span (Span: 0, or Span:1), or on different spans.
    - If you have determined that there is only one failed media drive, you must get the media drive(s) online in the LSI MegaRAID Storage Manager. Go to Step 16.
    - If you have determined that there are two or more failed media drives, and they are on *different* spans (e.g., one failed drive on Span: 0, and one failed drive on Span: 1), you must get the media drives online in the LSI MegaRAID Storage Manager. Go to Step 16.
    - If you have determined that there are two or more failed media drives, and they are on the *same* span (two failed drives on Span: 0, or Span: 1), you will lose your media, and need to re-RAID all of your media drives from scratch. For more information on how to re-RAID your media drives, see "Re-RAIDing Media Drives from Scratch (4-Channel Model Servers)" on page 111.
16. In the Drives folder, right-click a drive that has failed or is bad, and select **Replace Physical Drive**.

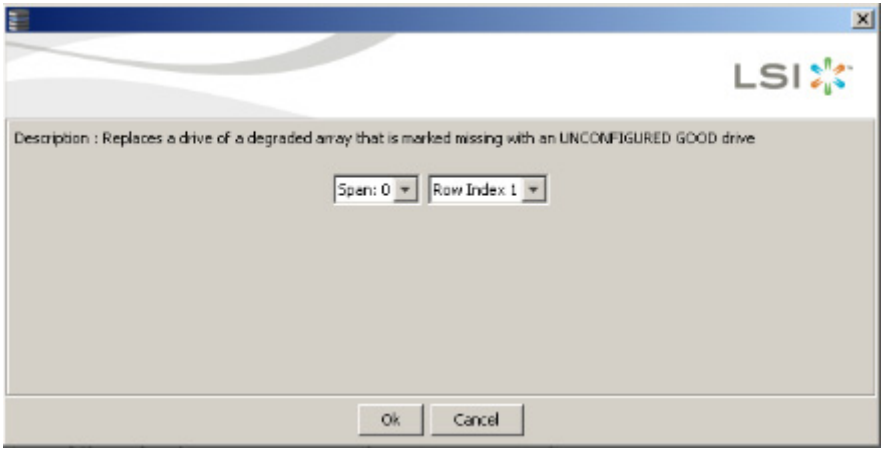
If the failed, bad, or missing drive has already been removed, it will not appear in the Span within the Drives folder.

17. In the Unconfigured Drives folder, do the following:
    a. Right-click on the unconfigured drive, and select **Change to Unconfigured Good**.

*Depending on the failure scenario, the status for the drive might already be set to **Unconfigured Good**.*

b. Right-click on the un-configured drive again, and select **Replace Missing Drive**.

The LED for the drive flashes and can be seen on the front of the server. A dialog box opens showing the drive location.


LSI
Description : Replaces a drive of a degraded array that is marked missing with an UNCONFIGURED GOOD drive
Span: 0
Row Index 1
Ok
Cancel

18. Note the drive location and number, and click **OK**.
19. Right-click on the failed drive in the Unconfigured Good tree, and select **Start Rebuild**.

    The MegaRAID Storage Manager dialog box opens.
20. Click **Confirm**, and then click **Yes**.

    The drive will now display as “Rebuild”.

It takes approximately six hours to rebuild a drive.

21. If you want to view the Rebuild progress, select **Manage > Show Progress**.

    The Group Show Progress dialog box opens. Click **OK** to close the box when you are done.
22. (Option) If you had two failed drives (on different spans), repeat Steps 8-13 for the other failed media drive.

Re-RAIDing Media Drives from Scratch (4-Channel Model Servers)

This topic contains information on how to re-RAID your media drives in the event that two or more media drives from the same array have failed.

Before you perform this procedure, you must take your system off air, as the media disk replacement process can cause possible problems with video playout. Depending on the amount of data, as well as the activity in the disk array, the task of replacing a drive can take a considerable amount of time.

This procedure creates a new RAID50 drive group on the AirSpeed 5000 or AirSpeed 5500 server.

Before you begin this procedure, you must have already removed the physical media drives from the chassis and replaced them with new drives, as described in Steps 1-7 of the topic "Removing and Replacing Media Drives (4-Channel Models)" on page 106.

To re-RAID Media Drives from scratch:

1. On the AirSpeed 5000 or AirSpeed 5500 server, right click on **Computer**, and select **Manage**.

   The Computer Management dialog box opens.

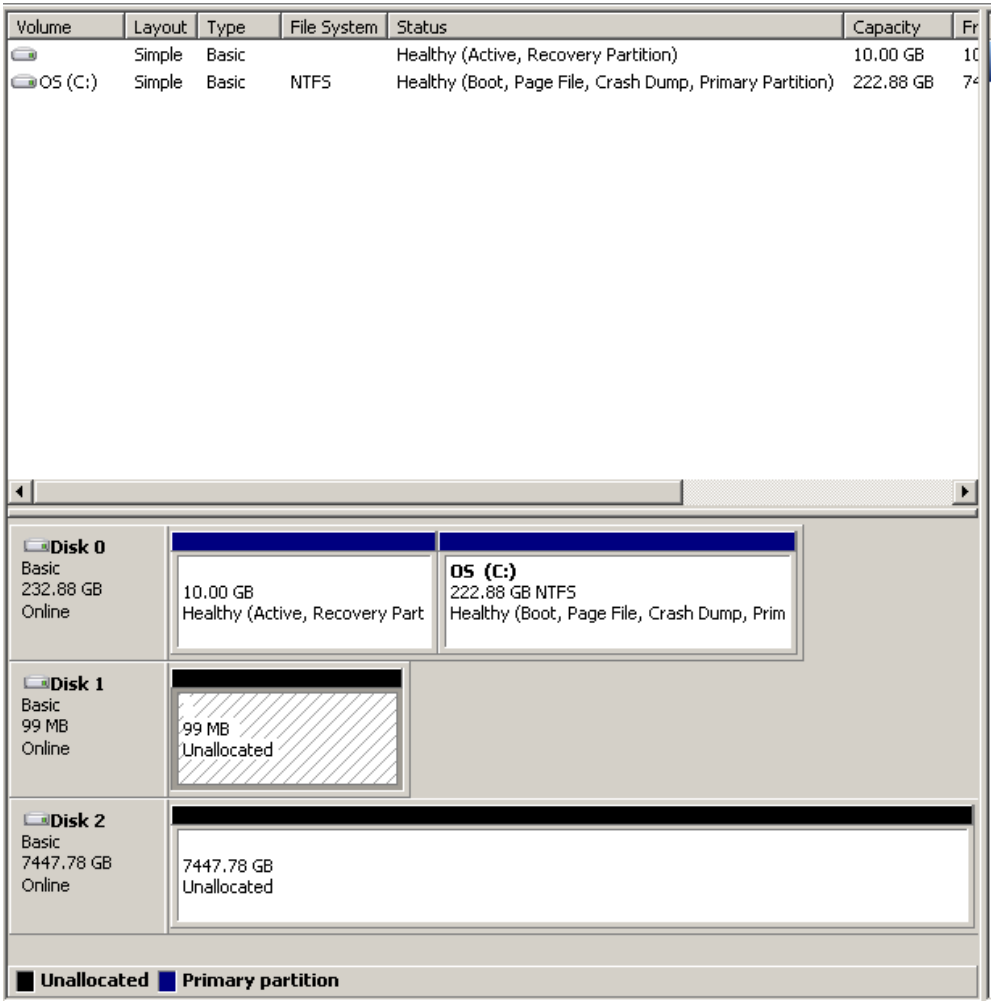
2. In the Storage folder, select **Disk Management**.

   The Disk Management window opens.

3. Right-click on the RAW partition in Disk 1, and select **Delete Volume** from the menu.

*If Disk 1also appears, right-click on the RAW partition in Disk 2, and select **Delete Volume** from the menu.*

The Disk Management dialog box should appear as in the following example.



4. Once you have verified that you have deleted the existing volumes, you can close the Disk Management window, and go to the next step.

5. Start the MegaRAID Storage Manager by selecting **Start > All Programs > MegaRAID Storage Manager > StartupUI**, or select the MegaRAID Storage Manager desktop icon.

If your AirSpeed 5000 server OS image is later than version 6, it will not have the LSI MegaRAID Storage Manager software pre-installed. Earlier AirSpeed 5000 software versions had this software pre-installed on the server. To get the latest LSI MegaRAID Storage Manager software, it is available to download under LSI's terms and conditions at ***http://www.lsi.com.***

From the website, you can locate and download the latest Windows-based LSI MegaRAID Storage Manager software that supports the MegaRAID SAS 9260 4i product.

The MegaRAID Storage Manager - Host View dialog box opens.

6. Select the IP address of the AirSpeed 5000 or AirSpeed 5500 server in the IP Address field, and click **Login**.

   The Enter User Name & Password dialog box opens.

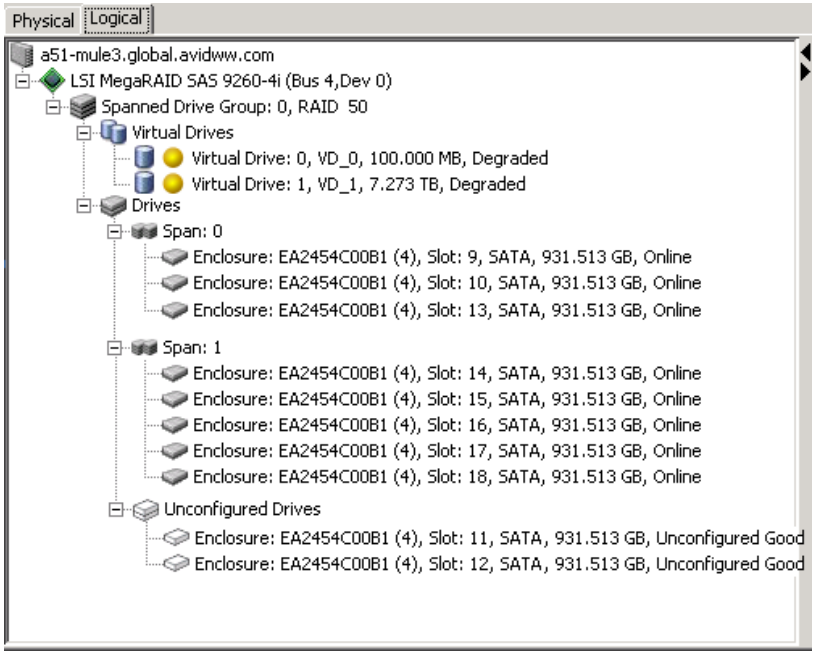
7. Type the local machine login credentials.
   a. In the User Name field, type **amsuser**.
   b. In the Password field, type **is-admin**.
   c. Click **Login**.

      The LSI MegaRAID Storage Manager application opens.

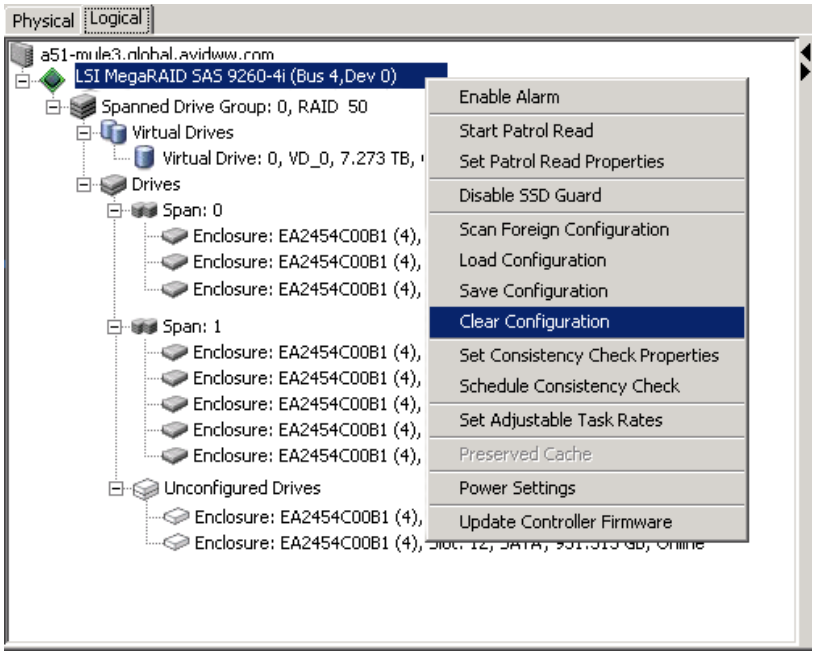
8. Click the **Logical** tab to confirm that the failed drives are in the same Span, and that the new drives you inserted appear in the Unconfigured Drives tree.

   In the following example, note the following:

   - In the Drives tree, Span 0: has two failed drives (Slot 11, and Slot 12).
   - In the Unconfigured Drives tree, notice that the drives in Slot 11 and Slot 12 appear there as “Unconfigured Good”. This indicates that they are new un-configured media drives.


Physical
Logical
a51-mule3.global.avidww.com
LSI MegaRAID SAS 9260-4i (Bus 4,Dev 0)
Spanned Drive Group: 0, RAID 50
Virtual Drives
Virtual Drive: 0, VD_0, 100.000 MB, Degraded
Virtual Drive: 1, VD_1, 7.273 TB, Degraded
Drives
Span: 0
Enclosure: EA2454C00B1 (4), Slot: 9, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 10, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 13, SATA, 931.513 GB, Online
Span: 1
Enclosure: EA2454C00B1 (4), Slot: 14, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 15, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 16, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 17, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 18, SATA, 931.513 GB, Online
Unconfigured Drives
Enclosure: EA2454C00B1 (4), Slot: 11, SATA, 931.513 GB, Unconfigured Good
Enclosure: EA2454C00B1 (4), Slot: 12, SATA, 931.513 GB, Unconfigured Good

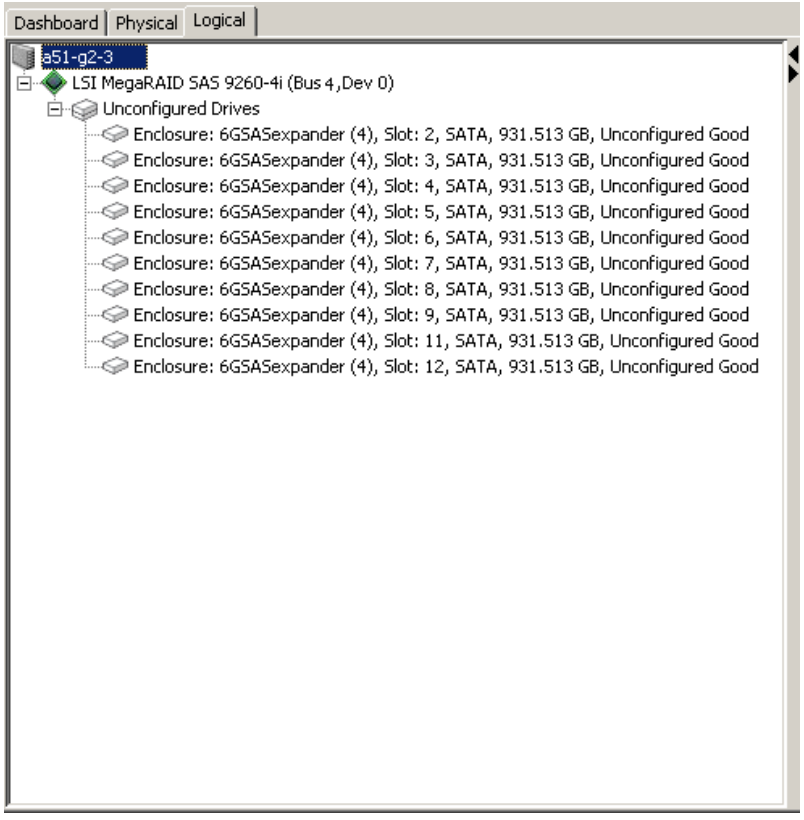
9. Clear the existing configuration by doing the following:
   a. Right-click on the **LSI MegaRAID SAS**.
   b. Select the **Clear Configuration** option from the list



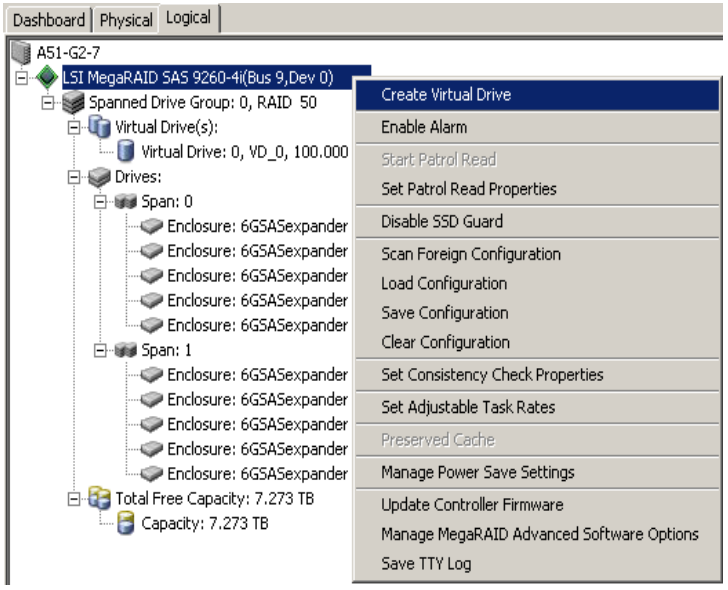
The Confirm Clear Configuration dialog box opens.

10. Select the **Confirm** check box, and click **Yes** to clear the existing configuration.

    After the existing configuration is cleared, all of the drives that were in the Span: 0, and Span:1 trees should now appear in the Unconfigured Drives tree as “Unconfigured Good”.


Dashboard
Physical
Logical
a51-g2-3
LSI MegaRAID SAS 9260-4i (Bus 4,Dev 0)
Unconfigured Drives
Enclosure: 6GSASexpander (4), Slot: 2, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 3, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 4, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 5, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 6, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 7, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 8, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 9, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 11, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (4), Slot: 12, SATA, 931.513 GB, Unconfigured Good

11. Right-click the **LSI MegaRAID SAS** again, and select **Create Virtual Drive**.



The Create Virtual Drive - Choose mode dialog box opens.

12. Select the **Advanced** radio button, and click **Next**.

    The Create Drive Group - Drive Group Settings dialog box opens.

13. Select the Drive group settings by doing the following:

    a. In the RAID level field, select **RAID 50 - Spanned Drive Group**.

    b. Select five drives by pressing **Ctrl** and clicking on the five drives.

       The Add > button becomes enabled.

    c. Click the **Add >** button to add the five drives to Span 0 in the Spanned Drive Group0 tree.

    d. Create a new Span by clicking the **Create Span** button.

       It will generate Span 1 at the bottom of the Drive groups field.

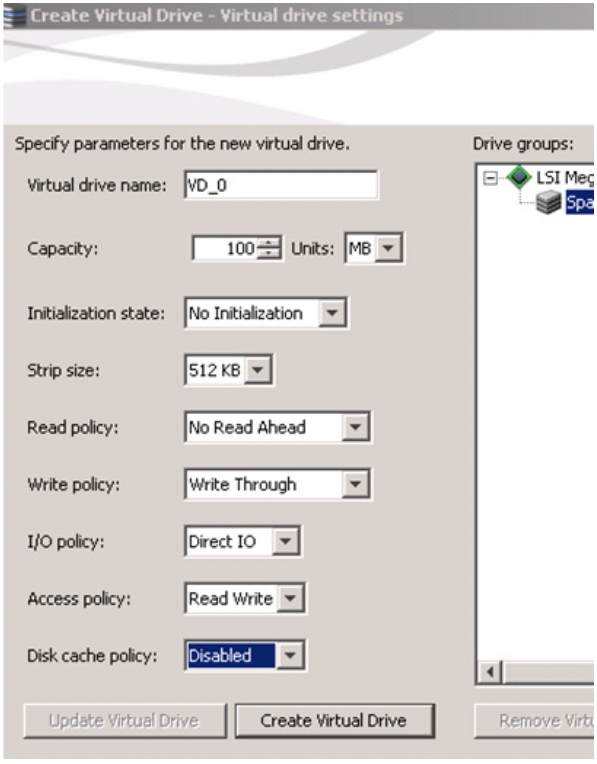
    e. Select the remaining five drives by pressing **Ctrl** and clicking on the remaining five drives.

    f. Click the **Add >** button to add them to Span 1.

    g. Click the **Create Drive Group** button.

h. Click the **Next** button.

The Create Virtual Drive - Virtual drive settings dialog opens.



14. You need to create two virtual drives. To create the first virtual drive, do the following:
    a. In the Virtual drive name field, make sure it says **VD_0**.
    b. In the Units field, select **MB**.
    c. In the Capacity field, type **100**.
    d. In the Initialization state field, select **No Initialization**.
    e. In the Strip(e) size field, select **512 KB**.
    f. In the “Read policy” field, select **No Read Ahead**.
    g. In the “Write policy” field, select **Write Through.**
    h. In the I/O Policy field, select **Direct I/O**.
    i. In the Access policy field, select **Read Write**.
    j. In the Disk Cache Policy, select **Disabled**.

15. Click the **Create Virtual Drive** button.

    The Write Through Selected dialog box opens.

16. Click **Yes** to confirm the changes for Write Policy settings.

17. Click the **Next** button.

    The Create Virtual Drive - Summary dialog box opens.

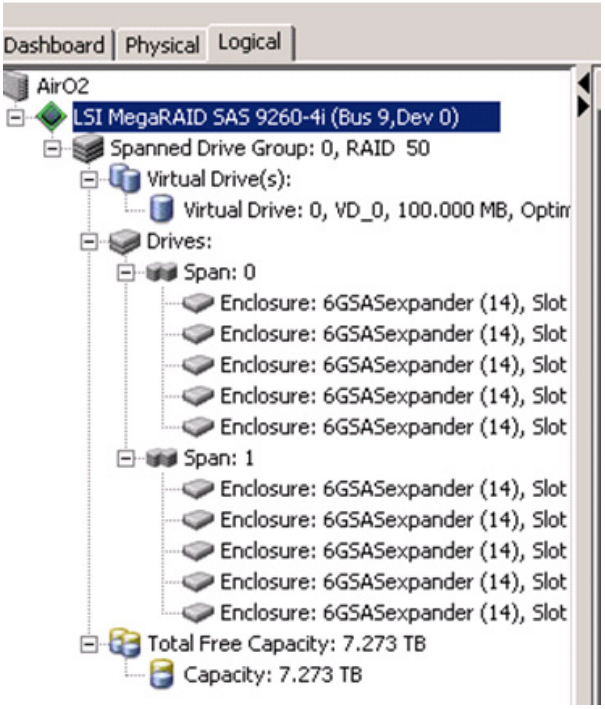
18. Review the summary for the settings to create the virtual drive VD_0.

19. Click **Finish** to finish creating the virtual drive VD_0 100.000 MB.

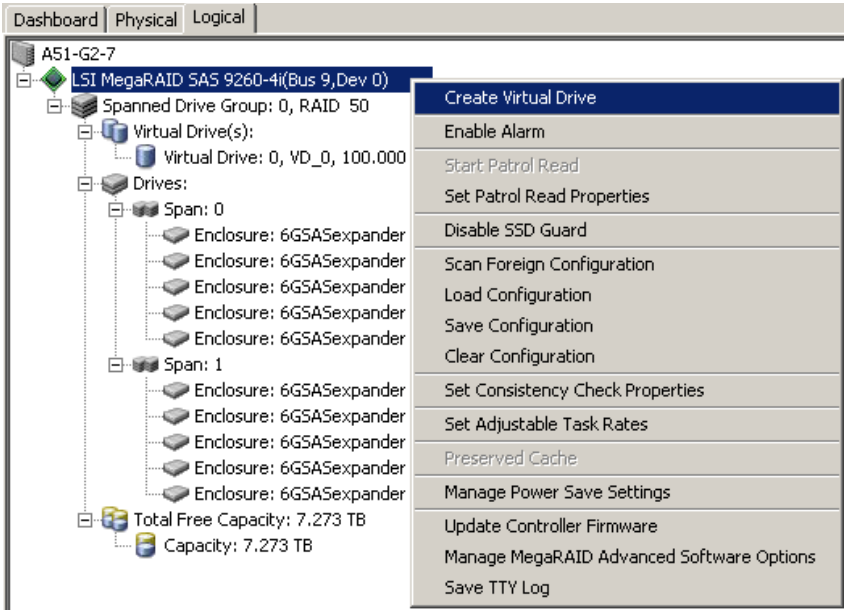
    A message saying “The virtual drive(s) successfully created” opens.

20. Click **OK**.

    The following is an example of what the Logical tab looks like. At the top of the screen is the first virtual drive 0 (VD_0, 100.000 MB). At the bottom is the un-configured free drive space.



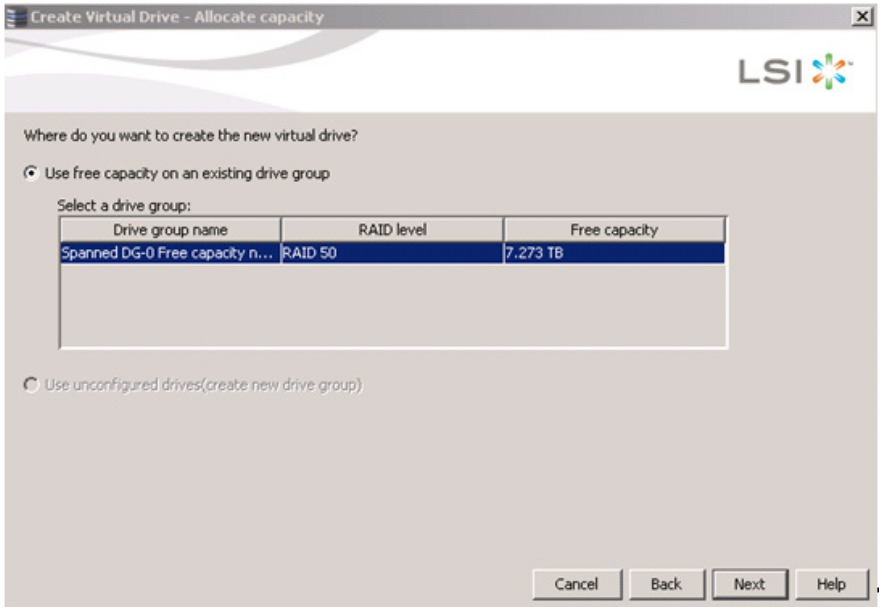
21. To create the second virtual drive, right-click the **LSI MegaRAID SAS** again, and select **Create Virtual Drive**.



The Create Virtual Drive - Choose mode dialog box opens.

22. Select the **Advanced** radio button, and click **Next**.

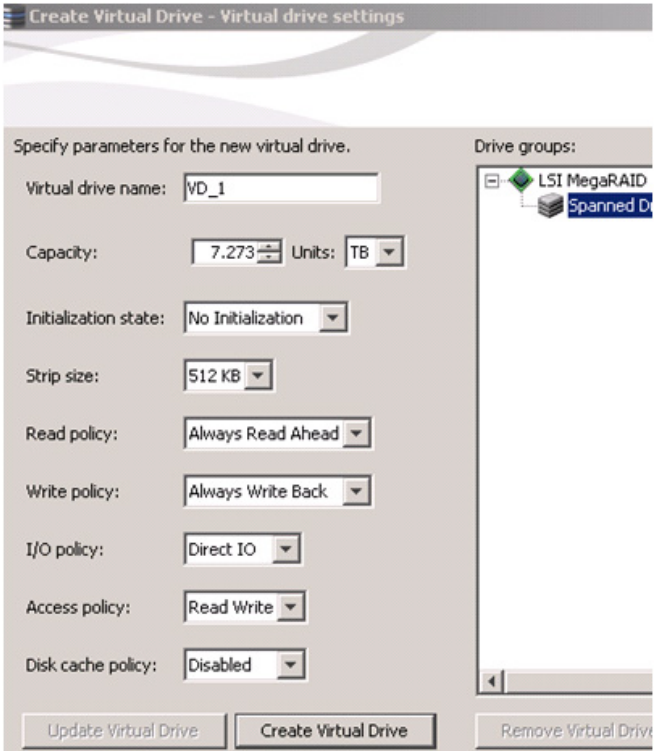
    The Create Virtual Drive - Allocate Capacity dialog box opens, asking if you want to use the remaining free capacity on the existing drive group.



23. Click **Next** to accept.

    The Virtual Drives settings dialog box opens.

24. In the Virtual drive settings dialog box, do the following:
    a. In the Virtual drive name field, make sure it says **VD_1**.
    b. In the Capacity field, leave the default of **7.273**.
    c. In the Units field, leave the default of **TB**.
    d. In the Initialization state field, select **No Initialization**.
    e. In the Strip(e) size field, select **512 KB**.
    f. In the Read policy field, select **Always Read Ahead.**
    g. In the Write policy field, select **Always Write Back**.
    h. In the I/O policy field, select **Direct I/O**.
    i. In the Access policy field, select **Read Write**.
    j. In the Disk cache policy field, select **Disabled**.



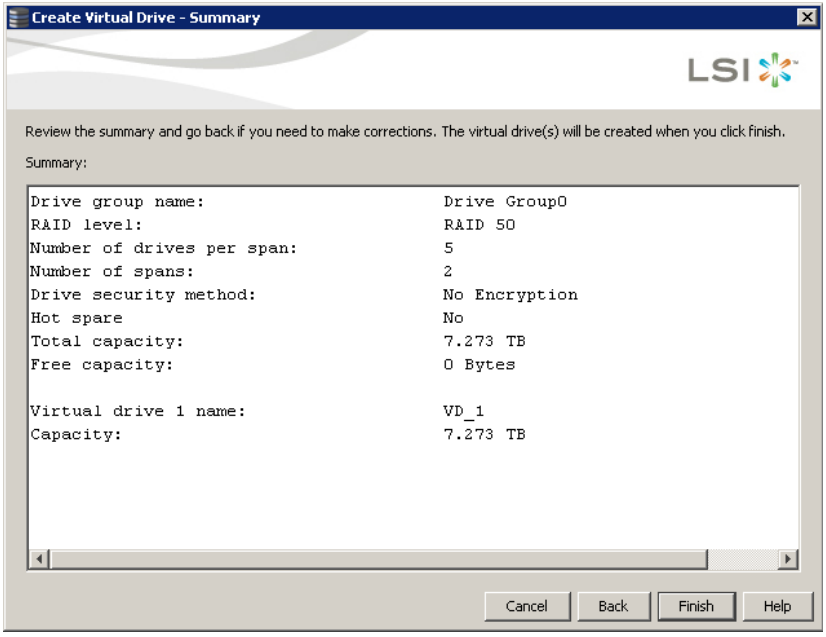
    k. Click the **Create Virtual Drive** button.

       The Always Write Back Selected dialog box opens.

    l. Click **Yes** to confirm the changes for the write policy setting.

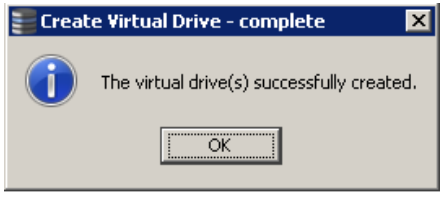
m. Click the **Next** Button.

The Create Virtual Drive - Summary dialog box opens.


Create Virtual Drive - Summary
LSI
Review the summary and go back if you need to make corrections. The virtual drive(s) will be created when you click finish.
Summary:
Drive group name: Drive Group0
RAID level: RAID 50
Number of drives per span: 5
Number of spans: 2
Drive security method: No Encryption
Hot spare No
Total capacity: 7.273 TB
Free capacity: 0 Bytes
Virtual drive 1 name: VD_1
Capacity: 7.273 TB
Cancel
Back
Finish
Help

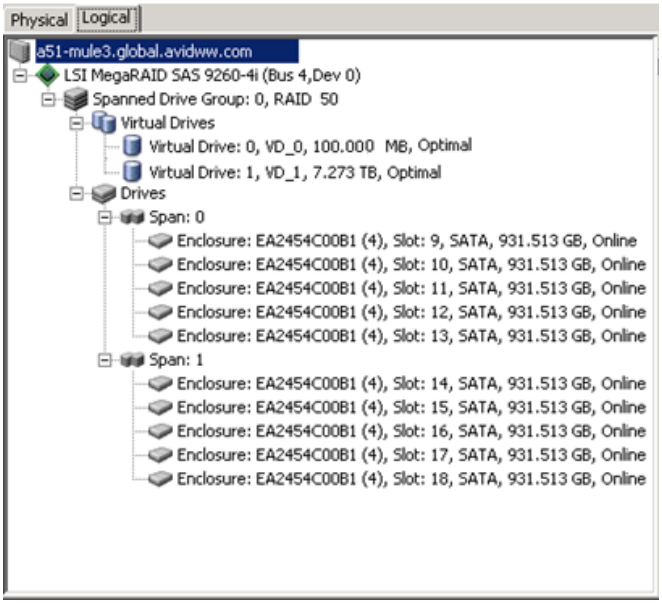
25. Review the summary for the settings you selected to create the virtual drives. Make sure the settings are correct before you create the virtual drive.
26. Once you have confirmed your settings are correct, click the **Finish** button to create the virtual drive.

    A message box appears stating “The virtual drive(s) successfully created.”



27. Click **OK** to close the message box.

    When you are done, the Logical Tab should appear as it does in the following example:


Physical
Logical
a51-mule3.global.avidww.com
LSI MegaRAID SAS 9260-4i (Bus 4,Dev 0)
Spanned Drive Group: 0, RAID 50
Virtual Drives
Virtual Drive: 0, VD_0, 100.000 MB, Optimal
Virtual Drive: 1, VD_1, 7.273 TB, Optimal
Drives
Span: 0
Enclosure: EA2454C00B1 (4), Slot: 9, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 10, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 11, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 12, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 13, SATA, 931.513 GB, Online
Span: 1
Enclosure: EA2454C00B1 (4), Slot: 14, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 15, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 16, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 17, SATA, 931.513 GB, Online
Enclosure: EA2454C00B1 (4), Slot: 18, SATA, 931.513 GB, Online

    After the configuration, the system might go to “initializing mode”. This takes about 6 or 7 hours to initialize a single disk, and 12 to 14 hours for two disks.

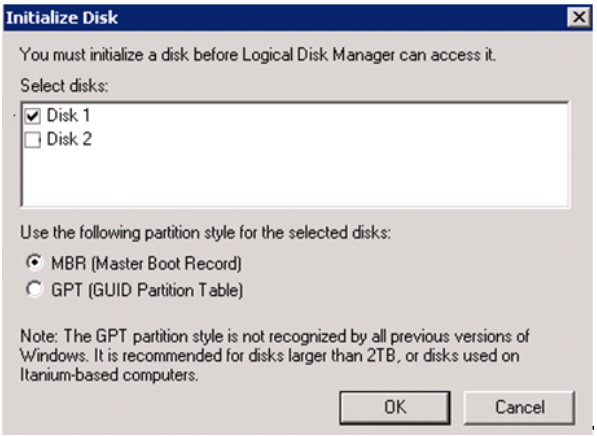
*To view your progress, select **Manage > Show Progress**.*

28. In Windows, do the following:
    a. Right-click on **Computer**, and select **Manage**.

       The Computer Management dialog box opens.

    b. In the Storage tree, select **Disk Management**.

       The Initialize Disk dialog box opens.


Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
Disk 1
Disk 2
Use the following partition style for the selected disks:
MBR (Master Boot Record)
GPT (GUID Partition Table)
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disks used on Itanium-based computers.
OK
Cancel

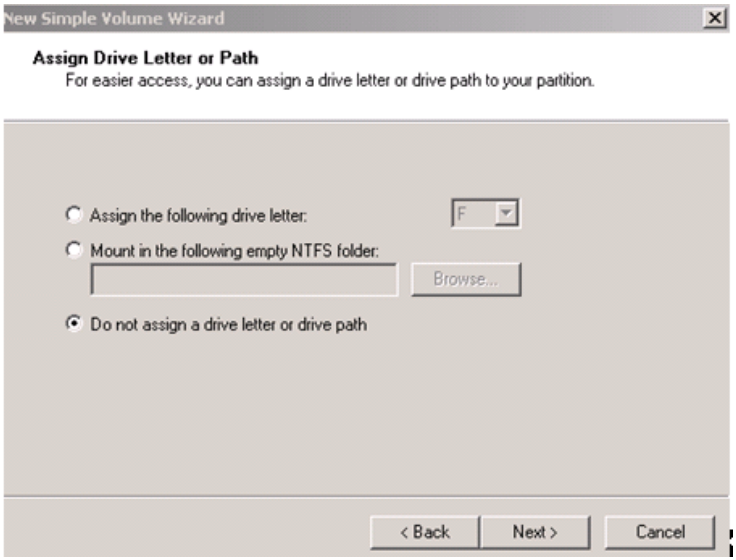
*If the Initialize Disk dialog box does not appear, you need to go to the **diskpart** utility to clean the previous configuration on Disk 1, by doing the following:*

- Close the Computer Management dialog box.
- Select **Start > Run**.
- Type **diskpart**, and press **Enter**. The Diskpart command window will open.
- Type **list disk**, and press **Enter**.
- At the DISKPART prompt, type **select disk 1**, and press **Enter**. The message “Disk 1 is now the selected disk” appears.
- When disk 1 is selected, type **clean**, and press **Enter**. The message “DiskPart succeeded in cleaning the disk.” appears.
- Select **Computer Management > Storage > Disk Management**. The Initialize Disk dialog box will open automatically.

29. In the Initialize Disk dialog box, do the following:
    a. Uncheck **Disk 2** (but leave Disk 1 checked)
    b. Select the **MBR (Master Boot Record)** option.
    c. Click **OK**.

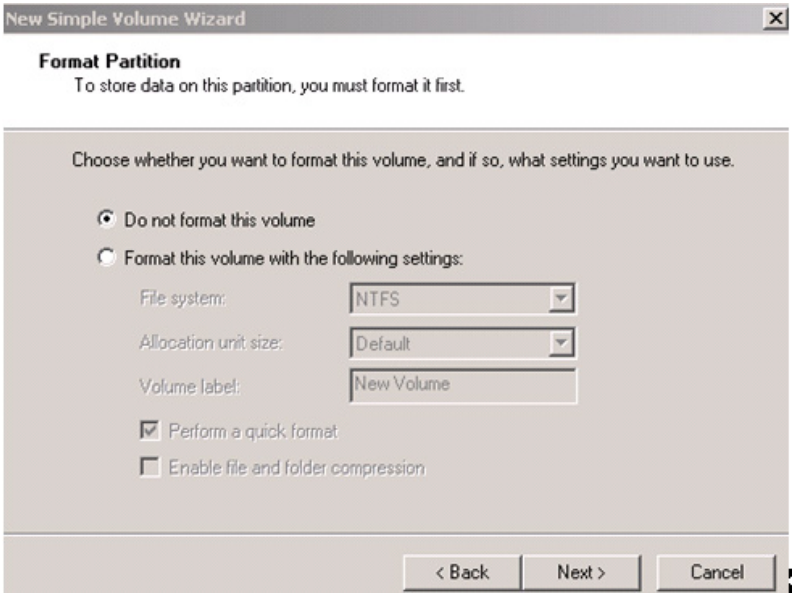
30. Select **Computer Management > Storage > Disk Management**, right click on the new Unallocated Drive space for **Disk 1**, and select **New Simple Volume**.
31. Click **Next** on the volume wizard screen.

    The Volume Size dialog box opens. It should show 97 MB for the volume size.
32. Click **Next**.


New Simple Volume Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
Assign the following drive letter:
F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
Cancel

33. Check the “Do not assign a drive letter or drive path” option and click **Next**.

    The Format Partition dialog box opens.


New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
NTFS
Allocation unit size:
Default
Volume label:
New Volume
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

34. In the Format Partition dialog box, select the “Do not format this volume” option.
35. Click **Next** and then click **Finish**.

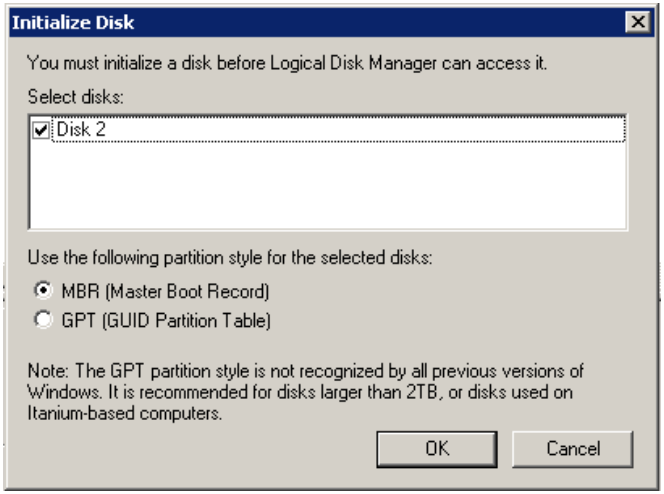
    The partition should now show as RAW, Healthy, (Primary Partition).
36. Close the Computer management window and then reopen it.

37. In Windows, do the following:
    a. Right-click on **Computer**, and select **Manage**.

       The Computer Management dialog box opens.

    b. In the Storage tree, select **Disk Management**.

       The Initialize Disk dialog box opens.


Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
Disk 2
Use the following partition style for the selected disks:
MBR (Master Boot Record)
GPT (GUID Partition Table)
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disks used on Itanium-based computers.
OK
Cancel

38. In the Initialize Disk dialog box, do the following:
    a. Make sure **Disk 2** is selected.

       Disk 1 should not appear.

    b. Select the **GPT (GUID Partition Table)** option.

    c. Click **OK**.

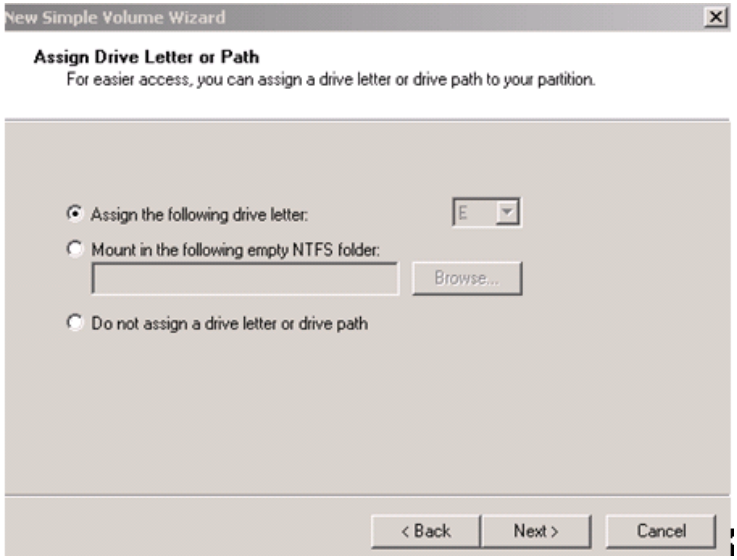
39. In **Computer Management > Storage > Disk Management**, right click on the new Unallocated Drive space for Disk 2, and select **New Simple Volume**.

40. Click **Next** on the volume wizard screen.

    The Volume Size dialog box opens. It should show **7626522 MB** for the volume size.

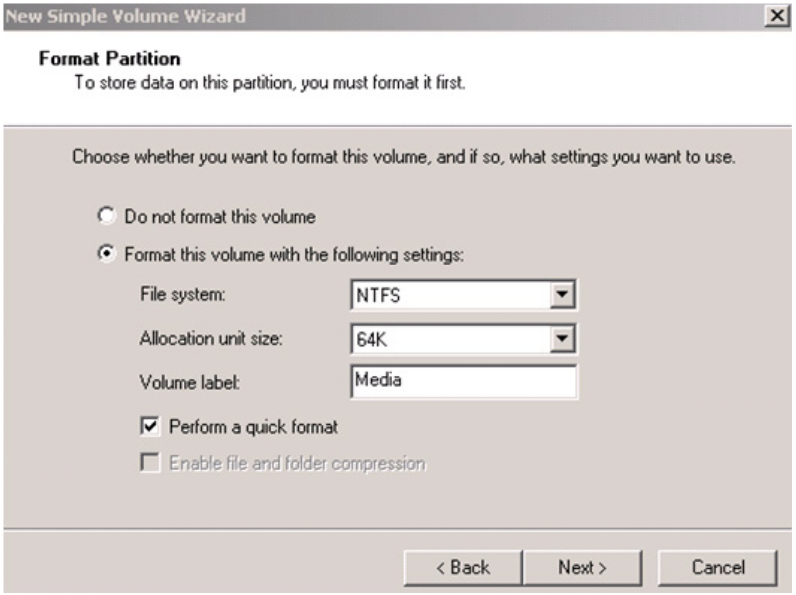
41. Click **Next**.

    The Assign Drive Letter or Path dialog box opens.


New Simple Volume Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
Assign the following drive letter:
E
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
Cancel

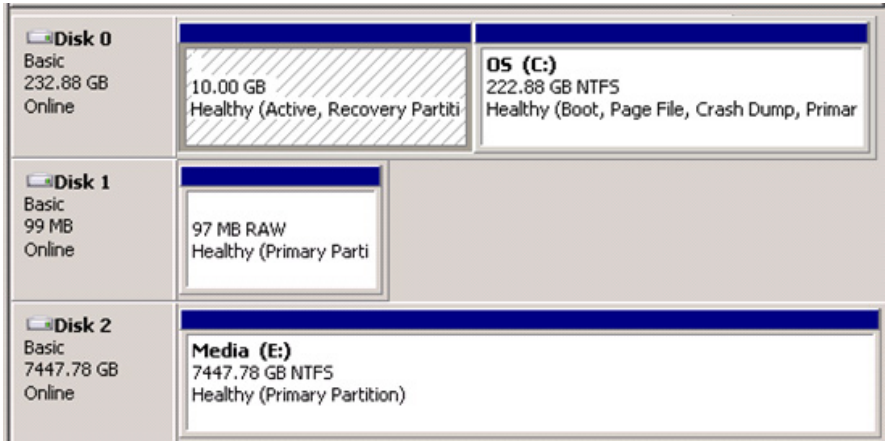
42. In the "Assign the following drive letter" field, make sure the drive letter is set to "**E**" and click **Next**.

    The Format Partition dialog box opens.


New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
NTFS
Allocation unit size:
64K
Volume label:
Media
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

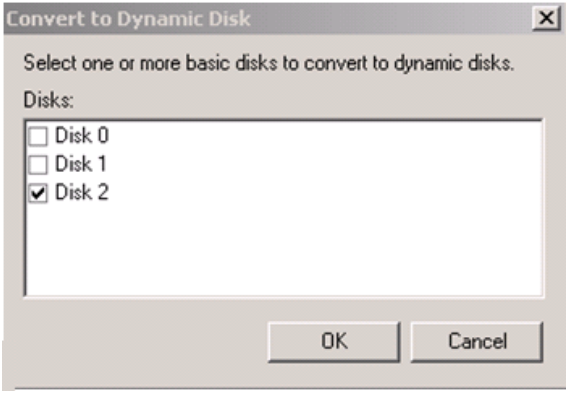
43. In the Format Partition dialog box, do the following:
    a. Select the "Format this volume with the following settings" option.
    b. Set the Allocation unit size to **64K**.
    c. Change the Volume label to **Media**.
    d. Make sure the "**Perform a quick format**" check box is selected.
    e. Click **Next**.
44. Click **Finish**.

    After the format is complete, the drive should show Healthy (Primary Partition).



45. Right-click on the **Disk 2** drive icon, and select **Convert to Dynamic Disk** from the list.

    The Convert to Dynamic Disk dialog box opens.



46. Make sure only **Disk 2** is selected (checked), and click **OK**.

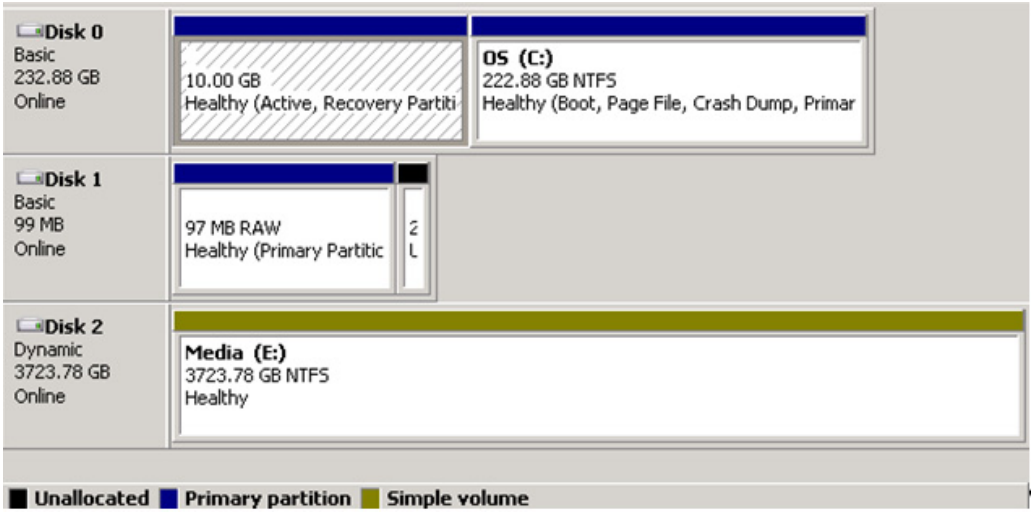
    A Confirmation dialog box opens.

47. Click **Convert** on the Confirmation dialog box.

    A Warning message dialog box opens.

48. Click "Yes" on the Warning message dialog box.

    The following is an example of how the window should appear when you are done.



49. Close the Disk Manager.

50. Reboot the system.

    You are now done creating the new media drives.

Identifying Failed Media Drives (2-Channel Models)

This topic contains information on how to identify that your AirSpeed 5000 or AirSpeed 5500 two (2) channel model server has one or more failed media drives.

For a list of media drive LED meanings, see "AirSpeed 5000 or AirSpeed 5500 Front Panel" in the AirSpeed 5000 / AirSpeed 5500 Setup Guide.

To identify failed media drives:

1. Determine if you have a failed media drive by doing the following:
   a. View the Drive status in the Health Monitor. On your AirSpeed 5000 or AirSpeed 5500 server, select **Start > All Programs > Avid > Avid Framework > Avid Health Monitor. Then, select Avid AirSpeed 5000 - Integration Service** (for the AirSpeed 5000 or AirSpeed 5500 server). In the Base Board category, the Media Drive RAID Status field would have a RED X, and would say "STATE_DEGRADED".
   b. View the LEDs on the front of the AirSpeed 5000 or AirSpeed 5500 server. A solid red LED on the front of the drive indicates that the media drive has failed. If it's flashing RED, the drive could be rebuilding the data. However, if it is solid RED, you need to replace that media drive.

In the event of a failed media drive, it is very important that you replace the failed media drive as soon as possible.

2. Note which drive(s) are failed.
   - If you have determined that there is only one failed media drive, you must remove and replace the media drive(s) in the AirSpeed 5000 or AirSpeed 5500 chassis.

     For more information, see "Removing and Replacing Media Drives (2-Channel Models)" on page 133.
   - If you have determined that there are two or more failed media drives, you will lose your media, and need to re-RAID all of your media drives from scratch. For more information on how to do that, see "Re-RAIDing Media Drives from Scratch (2-Channel Model Servers)" on page 137.

Removing and Replacing Media Drives (2-Channel Models)

When a single media drive fails, you must remove and replace the media drive in the AirSpeed 5000 or AirSpeed 5500 chassis. To identify which drive has failed, locate the media drive on the front of the server that has both the blue and red LEDs on solid. Once you have identified the failed media drive, you can remove it, and replace it with a new media drive.

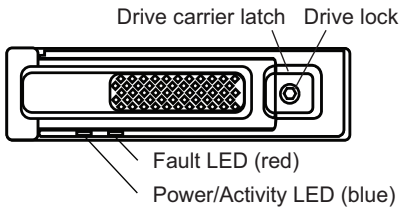
Before you perform this procedure, you must take your system off air, as the media disk replacement process can cause possible problems with video playout. Depending on the amount of data, as well as the activity in the disk array, the task of replacing a drive can take a considerable amount of time.

This procedure contains all of the necessary steps for successfully removing and replacing drives from the AirSpeed 5000 or AirSpeed 5500 two (2) channel model server chassis only.

Before you begin this procedure, you should make sure you have one or more spare media drive available. If not, you must obtain replacement drives before proceeding. For more information on ordering spare drives, see "Spares List" on page 90.

To remove and replace media drives:

1. Obtain replacement media drives.
2. Locate the data drive on the front of the AirSpeed 5000 or AirSpeed 5500 that has both the blue and red LEDs on solid.
3. Remove the drive from the chassis by pushing the button, then pull the handle to unlatch the drive and slide the drive carrier out of the AirSpeed 5000 or AirSpeed 5500 server.
4. Unscrew the old drive from the carrier, noting the holes used for each screw on the carrier.
5. Fasten the new drive into the carrier making sure to line up the four (4) screws with the correct holes in the carrier.
6. Push the drive carrier latch in, to release the handle and pull the handle completely open prior to inserting the drive carrier into the open slot.
7. Make sure the drive LEDs are on the bottom *before* you begin to slide the drive into the server.



***Do not* force a drive into a slot. If you are having problems installing a drive, check to make sure it is level and flat as you insert it into the server, that the drive carrier latch is open and at a 45 degree angle to the drive carrier, and that the LEDs are on the bottom of the drive carrier.**

8. Slide the drive into the open drive slot in the server until it stops. Approximately 1/2 inch of the drive carrier should be outside the server.
9. Push the handle into the drive carrier. This seats the drive in the server. You'll hear a click when the drive is fully seated and the handle latches in place.
10. Select **Start > All Programs > MegaRAID Storage Manager > StartupUI**.

If your AirSpeed 5000 server OS image is later than version 6, it will not have the LSI MegaRAID Storage Manager software pre-installed. Earlier AirSpeed 5000 software versions had this software pre-installed on the server. To get the latest LSI MegaRAID Storage Manager software, it is available to download under LSI's terms and conditions at ***http://www.lsi.com.***

From the website, you can locate and download the latest Windows-based LSI MegaRAID Storage Manager software that supports the MegaRAID SAS 9260 4i product.

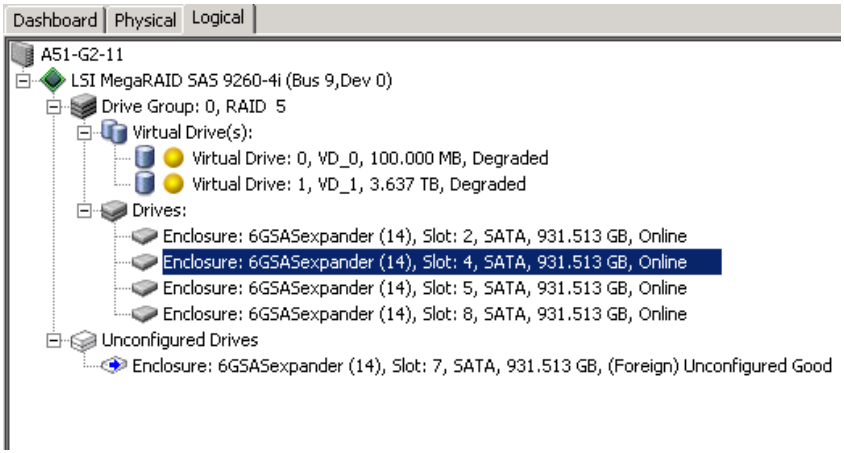
11. Click on the IP address URL link in the IP Address column for the AirSpeed 5000 or AirSpeed 5500 server. The User Name and Password dialog box opens.
12. Log in using the Administrator name **amsuser**, and password of **is-admin**.

    Make sure the Login Mode is set to **Full Access**.
13. Click **OK**.

14. Click the **Logical** tab to confirm the location of the failed drive.

    In the following example, note the following:

    - In the Drives tree, note the failed drive (Slot 07) is missing.
    - In the Unconfigured Drives tree, the drive in Slot 07 appears there. This means that it is an un-configured media drive.


Dashboard
Physical
Logical
A51-G2-11
LSI MegaRAID SAS 9260-4i (Bus 9,Dev 0)
Drive Group: 0, RAID 5
Virtual Drive(s):
Virtual Drive: 0, VD_0, 100.000 MB, Degraded
Virtual Drive: 1, VD_1, 3.637 TB, Degraded
Drives:
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, Online
Unconfigured Drives
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, (Foreign) Unconfigured Good

15. In the Drives folder, right-click on the drive that has failed or is bad, and select **Replace Missing Drive**.

If the failed, bad, or missing drive has already been removed, it will not appear in the Drives folder.

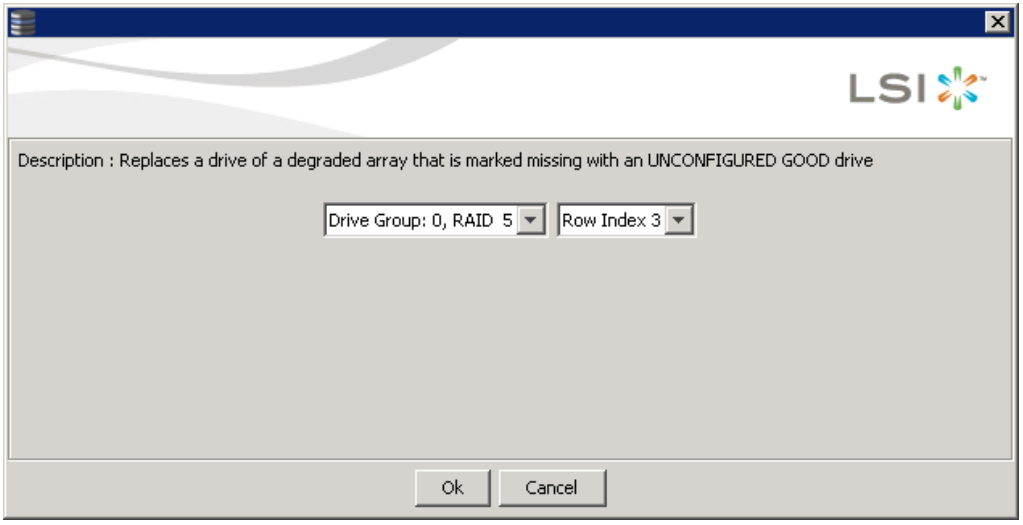
16. In the Unconfigured Drives folder, do the following:

    a. Right-click on the un-configured drive, and select **Change to Unconfigured Good**.

*Depending on the failure scenario, the status for the drive might already be set to **Unconfigured Good**.*

b. Right-click on the un-configured drive again, and select **Replace Missing Drive**.

The LED for the drive flashes and can be seen on the front of the server. A dialog box opens showing the drive location.


LSI
Description : Replaces a drive of a degraded array that is marked missing with an UNCONFIGURED GOOD drive
Drive Group: 0, RAID 5
Row Index 3
Ok
Cancel

17. Note the drive location and number, and click **OK**.
18. Right-click on the failed drive in the Unconfigured Good tree, and select **Start Rebuild**.

    The MegaRAID Storage Manager dialog box opens.
19. Click **Confirm**, and then click **Yes**.

    The drive will now display as “Rebuild”.

It takes approximately six hours to rebuild a drive.

20. If you want to view the Rebuild progress, select **Manage > Show Progress**.

    The Group Show Progress dialog box opens. Click **OK** to close the box when you are done.

Re-RAIDing Media Drives from Scratch (2-Channel Model Servers)

This topic contains information on how to re-RAID media drives for two (2) channel model servers in the event that two or more media drives have failed.

Before you perform this procedure, you must take your system off air, as the media disk replacement process can cause possible problems with video playout. Depending on the amount of data, as well as the activity in the disk array, the task of replacing a drive can take a considerable amount of time.

This procedure creates a new RAID 5 drive group on the AirSpeed 5000 or AirSpeed 5500 server.

Before you begin this procedure, you must have already removed the physical media drives from the chassis and replaced them with new drives, as described in Steps 1-7 of the topic "Removing and Replacing Media Drives (4-Channel Models)" on page 106.

To re-RAID Media Drives from scratch:

1. On the AirSpeed 5000 or AirSpeed 5500 server, right click on **Computer**, and select **Manage**.

   The Computer Management dialog box opens.

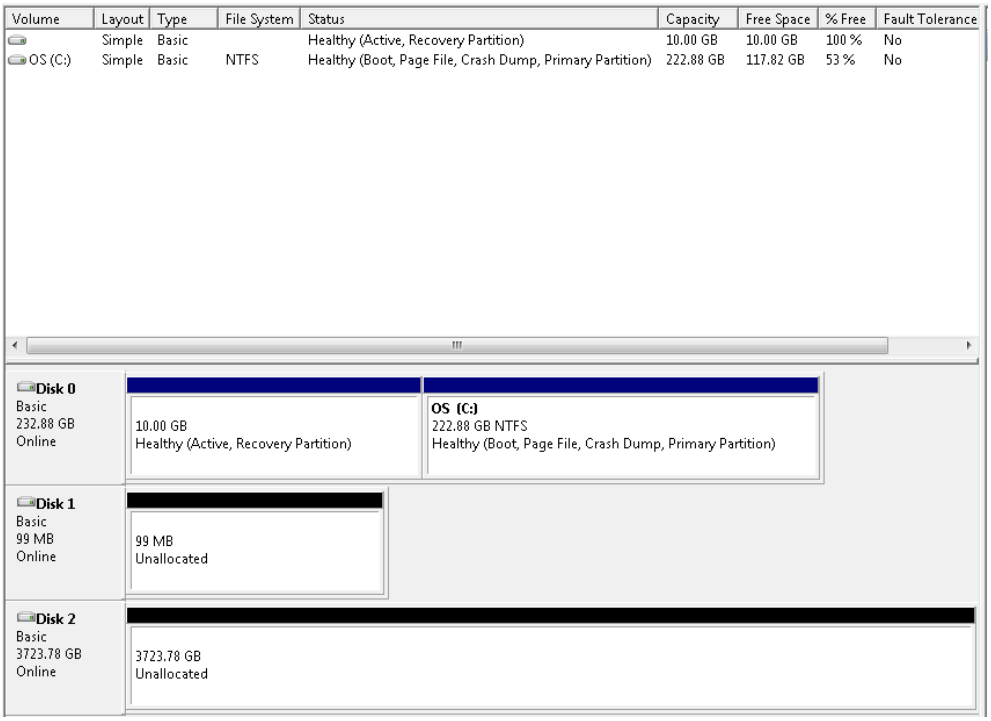
2. In the Storage folder, select **Disk Management**.

   The Disk Management window opens.

3. Right-click on the **(E:)** partition in Disk 2, and select **Delete Volume** from the menu.

*If Disk 1 also appears, right-click on the RAW partition in Disk 1, and select **Delete Volume** from the menu.*

The Disk Management dialog box should appear as in the following example.



4. Once you have verified that you have deleted the existing volumes, you can close the Disk Management window, and go to the next step.
5. Start the MegaRAID Storage Manager by selecting **Start > All Programs > MegaRAID Storage Manager > StartupUI**, or select the MegaRAID Storage Manager desktop icon.

If your AirSpeed 5000 server OS image is later than version 6, it will not have the LSI MegaRAID Storage Manager software pre-installed. Earlier AirSpeed 5000 software versions had this software pre-installed on the server. To get the latest LSI MegaRAID Storage Manager software, it is available to download under LSI's terms and conditions at ***http://www.lsi.com.***

From the website, you can locate and download the latest Windows-based LSI MegaRAID Storage Manager software that supports the MegaRAID SAS 9260 4i product.

The MegaRAID Storage Manager - Host View dialog box opens.

6. Select the IP address of the AirSpeed 5000 or AirSpeed 5500 server in the IP Address field, and click **Login**.

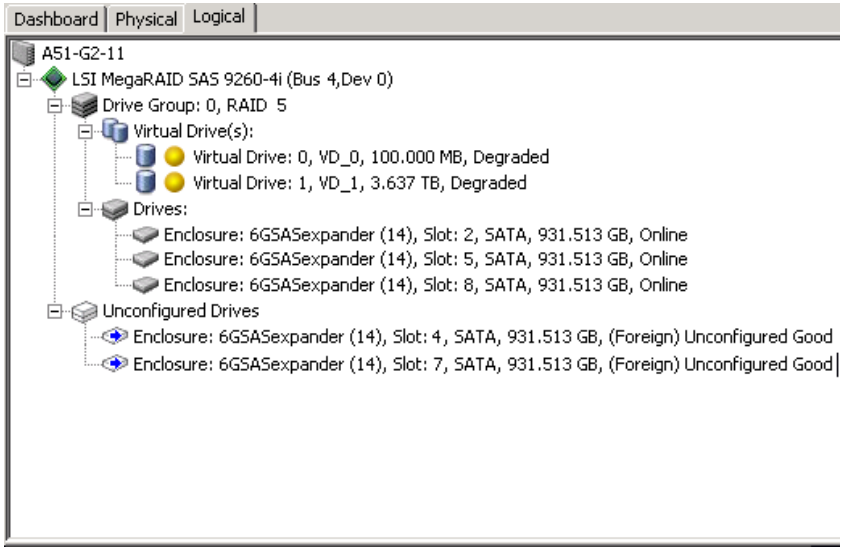
The Enter User Name & Password dialog box opens.

7. Type the local machine login credentials.
   a. In the User Name field, type **amsuser**.
   b. In the Password field, type **is-admin**.
   c. Click **Login**.

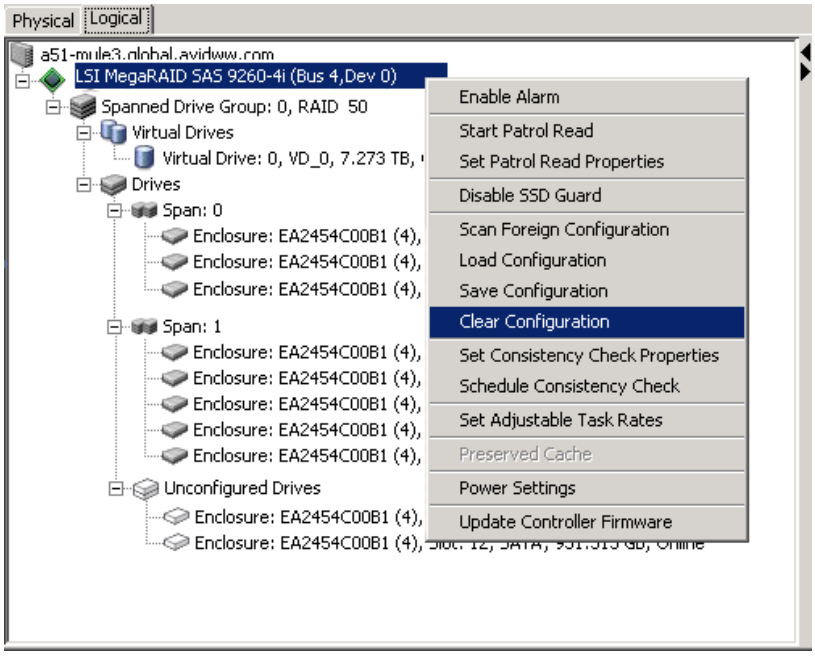
      The LSI MegaRAID Storage Manager application opens.
8. Click the **Logical** tab to confirm that the new drives you inserted appear in the Unconfigured Drives tree.

   In the following example, note the following:

   - In the Drives tree, the failed drives (Slot: 4, and Slot: 7) are missing.
   - In the Unconfigured Drives tree, notice that the drives in Slot 4: and Slot: 7 appear there as “Unconfigured Good”. This indicates that they are new un-configured media drives.


Dashboard
Physical
Logical
A51-G2-11
LSI MegaRAID SAS 9260-4i (Bus 4,Dev 0)
Drive Group: 0, RAID 5
Virtual Drive(s):
Virtual Drive: 0, VD_0, 100.000 MB, Degraded
Virtual Drive: 1, VD_1, 3.637 TB, Degraded
Drives:
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, Online
Unconfigured Drives
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, (Foreign) Unconfigured Good

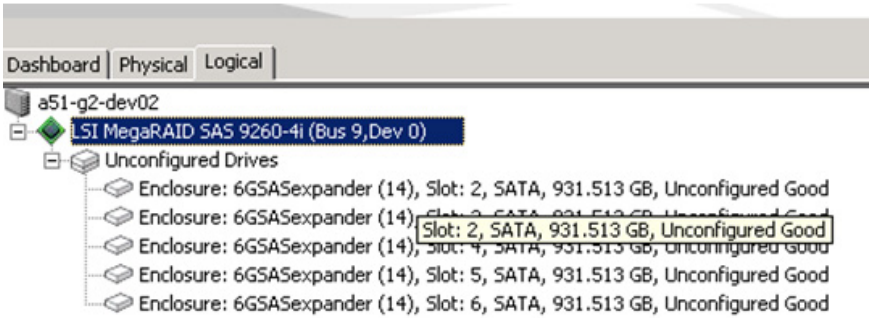
9. Clear the existing configuration by doing the following:
   a. Right-click on the **LSI MegaRAID SAS**.
   b. Select the **Clear Configuration** option from the list.



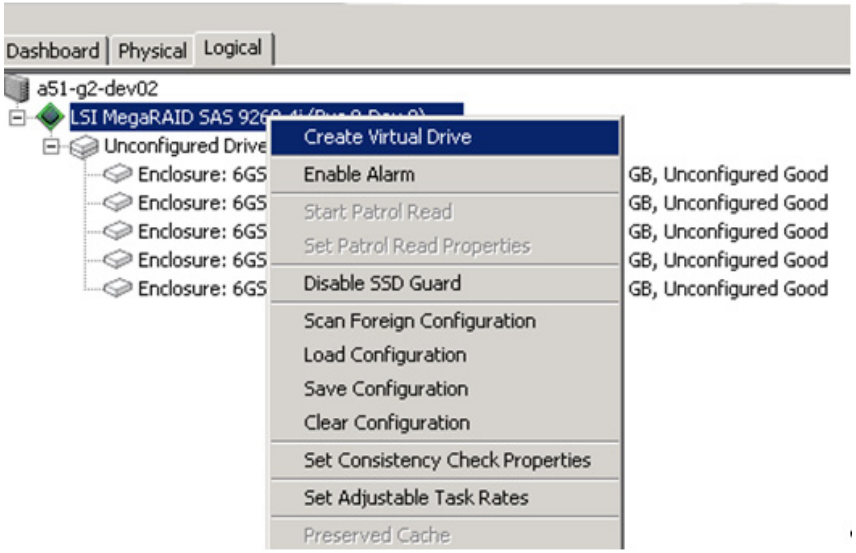
The Confirm Clear Configuration dialog box opens.

10. Select the **Confirm** check box, and click **Yes** to clear the existing configuration.

    After the existing configuration is cleared, all of the drives should now appear in the Unconfigured Drives tree as “Unconfigured Good”.


Dashboard
Physical
Logical
a51-g2-dev02
LSI MegaRAID SAS 9260-4i (Bus 9,Dev 0)
Unconfigured Drives
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (14),
Slot: 2, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (14),
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 6, SATA, 931.513 GB, Unconfigured Good

11. Right-click the **LSI MegaRAID SAS** again, and select **Create Virtual Drive**.



The Create Virtual Drive - Choose mode dialog box opens.

12. Select the **Advanced** radio button, and click **Next**.

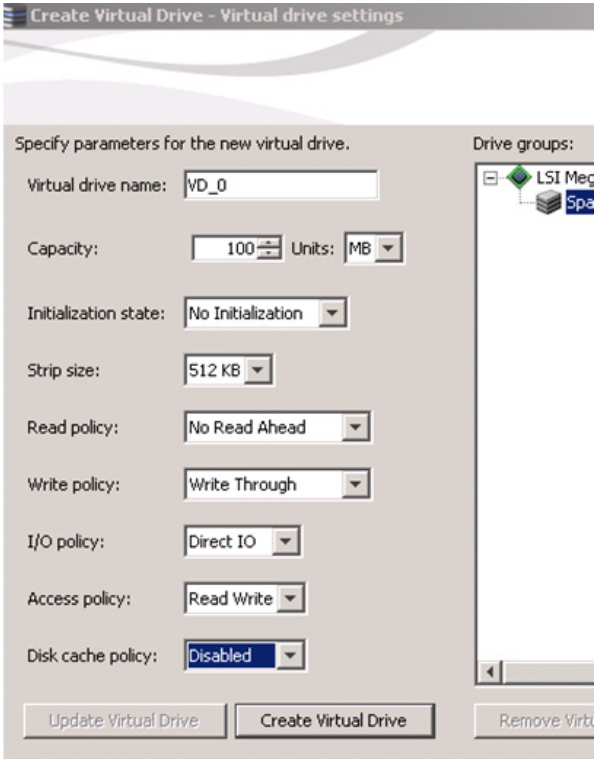
The Create Drive Group - Drive Group Settings dialog box opens.

13. Select the Drive group settings by doing the following:
    a. In the RAID level field, select **RAID 5**.
    b. Select five drives by pressing **Ctrl** and clicking on the five drives.

       The Add > button becomes enabled.
    c. Click the **Add >** button to add the five drives to the Drive Group0 tree.
    d. Click the **Create Drive Group** button.

e. Click the **Next** button.

The Create Virtual Drive - Virtual drive settings dialog opens.



14. You need to create two virtual drives. To create the first virtual drive, do the following:
    a. In the Virtual drive name field, make sure it says **VD_0**.
    b. In the Units field, select **MB**.
    c. In the Capacity field, type **100**.
    d. In the Initialization state field, select **No Initialization**.
    e. In the Strip(e) size field, select **512 KB**.
    f. In the “Read policy” field, select **No Read Ahead**.
    g. In the “Write policy” field, select **Write Through.**
    h. In the I/O Policy field, select **Direct I/O**.
    i. In the Access policy field, select **Read Write**.
    j. In the Disk Cache Policy, select **Disabled**.

15. Click the **Create Virtual Drive** button.

    The Write Through Selected dialog box opens.

16. Click **Yes** to confirm the changes for Write Policy settings.

17. In the Virtual drives settings dialog box, do the following:

    a. In the Virtual drive name field, make sure it says **VD_1**.

    b. In the Capacity field, leave the default of **3.637**.

    c. In the Units field, leave the default of **TB**.

    d. In the Initialization state field, select **No Initialization**.

    e. In the Strip(e) size field, select **512 KB**.

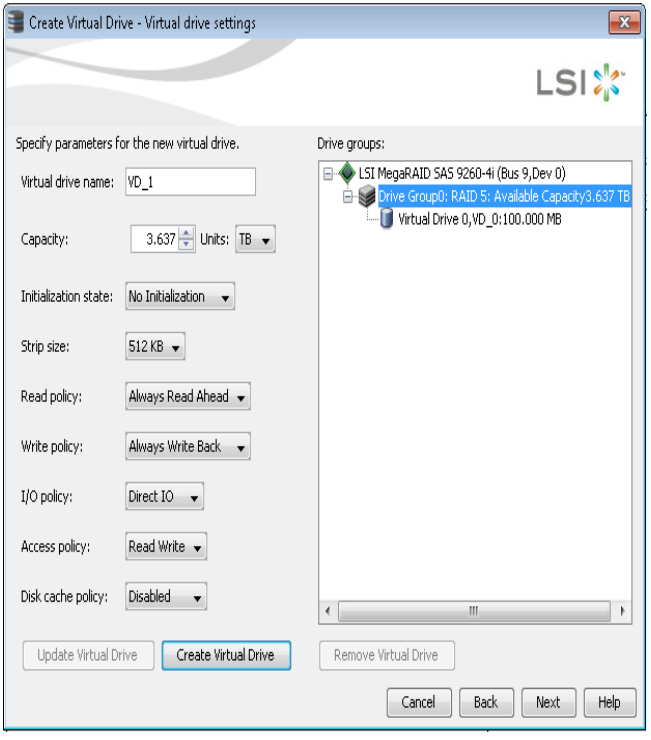
    f. In the Read Policy, select **Always Read Ahead.**

    g. In the Write policy field, select **Always Write Back**.

    h. In the I/O Policy field, select **Direct I/O**.

    i. In the Access policy field, select **Read Write**.

    j. In the Disk Cache Policy field, select **Disabled**.



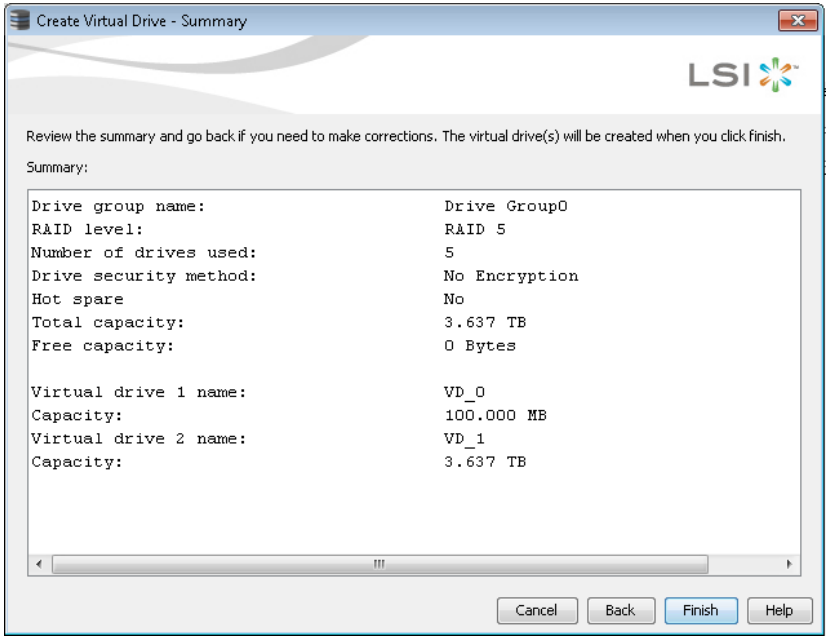
k. Click the **Create Virtual Drive** button.

The Always Write Back Selected dialog box opens.

l. Click **Yes** to confirm the changes for the write policy setting.

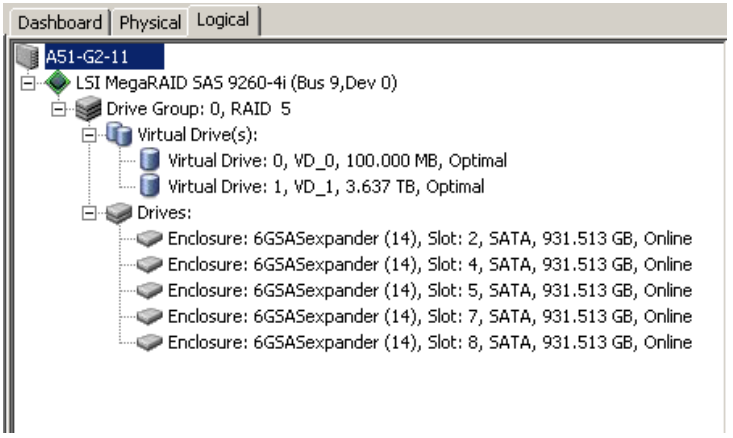
m. Click the **Next** Button.

The Create Virtual Drive - Summary dialog box opens.


Create Virtual Drive - Summary
LSI
Review the summary and go back if you need to make corrections. The virtual drive(s) will be created when you click finish.
Summary:
Drive group name: Drive Group0
RAID level: RAID 5
Number of drives used: 5
Drive security method: No Encryption
Hot spare No
Total capacity: 3.637 TB
Free capacity: 0 Bytes
Virtual drive 1 name: VD_0
Capacity: 100.000 MB
Virtual drive 2 name: VD_1
Capacity: 3.637 TB
Cancel
Back
Finish
Help

18. Review the summary for the settings you selected to create the virtual drives. Make sure the settings are correct before you create the virtual drive.
19. Once you have confirmed your settings are correct, click the **Finish** button to create the virtual drive. A message box appear stating “The virtual drive(s) successfully created.”
20. Click **OK** to close the message box.

21. When you are done, the Logical Tab should appear as it does in the following example:


Dashboard
Physical
Logical
A51-G2-11
LSI MegaRAID SAS 9260-4i (Bus 9,Dev 0)
Drive Group: 0, RAID 5
Virtual Drive(s):
Virtual Drive: 0, VD_0, 100.000 MB, Optimal
Virtual Drive: 1, VD_1, 3.637 TB, Optimal
Drives:
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, Online

After the configuration, the system might go to “initializing mode”. This takes about 6 or 7 hours.

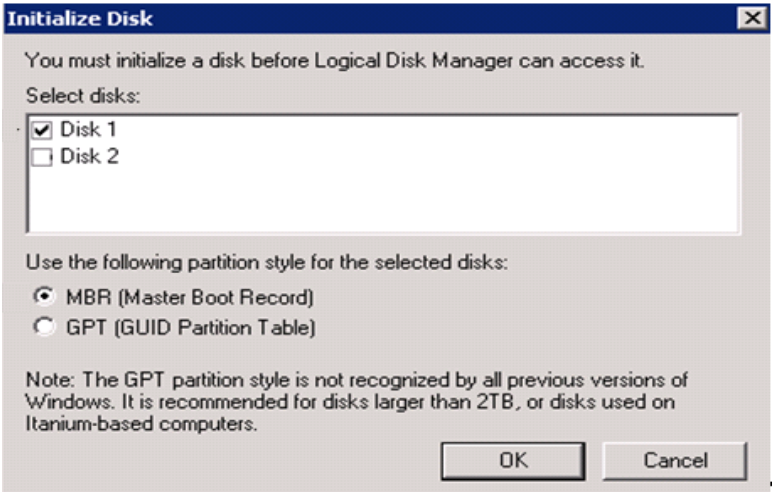
*To view your progress, select **Manage > Show Progress**.*

22. In Windows, do the following:
    a. Right-click on **Computer**, and select **Manage**.

       The Computer Management dialog box opens.

    b. In the Storage tree, select **Disk Management**.

       The Initialize Disk dialog box opens.


Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
Disk 1
Disk 2
Use the following partition style for the selected disks:
MBR (Master Boot Record)
GPT (GUID Partition Table)
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disks used on Itanium-based computers.
OK
Cancel

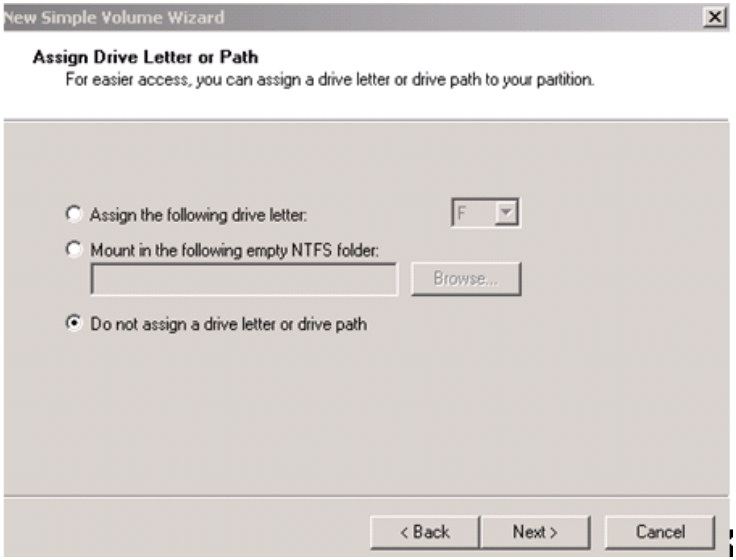
*If the Initialize Disk dialog box does not appear, you need to go to the **diskpart.exe** utility to clean the previous configuration on Disk 1, by doing the following:*

- Close the Computer Management dialog box.
- Select **Start > Run**.
- Type **diskpart**, and press **Enter**. The Diskpart command window opens.
- Type **list disk**, and press **Enter**.
- At the DISKPART prompt, type **select disk 1**, and press **Enter**. The message "Disk 1 is now the selected disk" appears.
- When disk 1 is selected, type **clean**, and press **Enter**. The message "DiskPart succeeded in cleaning the disk." appears.
- Select **Computer Management > Storage > Disk Management**. The Initialize Disk dialog box will open.

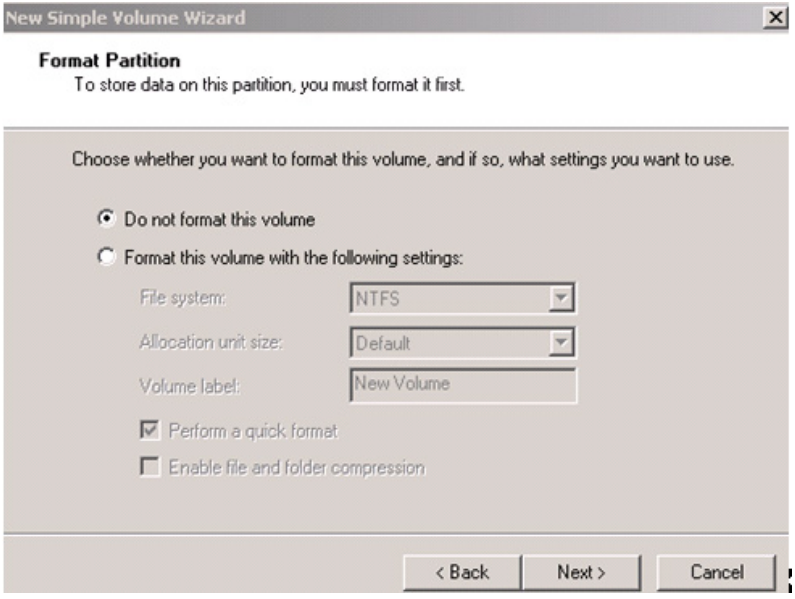
23. In the Initialize Disk dialog box, do the following:
    a. Uncheck **Disk 2** (but leave Disk 1 checked)
    b. Select the **MBR (Master Boot Record)** option.
    c. Click **OK**.
24. Select **Computer Management > Storage > Disk Management**, right click on the new Unallocated Drive space for Disk 1, and select **New Simple Volume**.
25. Click **Next** on the volume wizard screen.

    The Volume Size dialog box opens. It should show 97 MB for the volume size.

26. Click **Next**.


New Simple Volume Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
Assign the following drive letter:
F
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
Cancel

27. Check the "Do not assign a drive letter or drive path" option and click **Next**.
    The Format Partition dialog box opens.


New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
NTFS
Allocation unit size:
Default
Volume label:
New Volume
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

28. In the Format Partition dialog box, select the "Do not format this volume" option.

29. Click **Next** and then click **Finish**.

    The partition should now show as RAW, Healthy, (Primary Partition).

30. Close the Computer Management dialog box, and then reopen it.

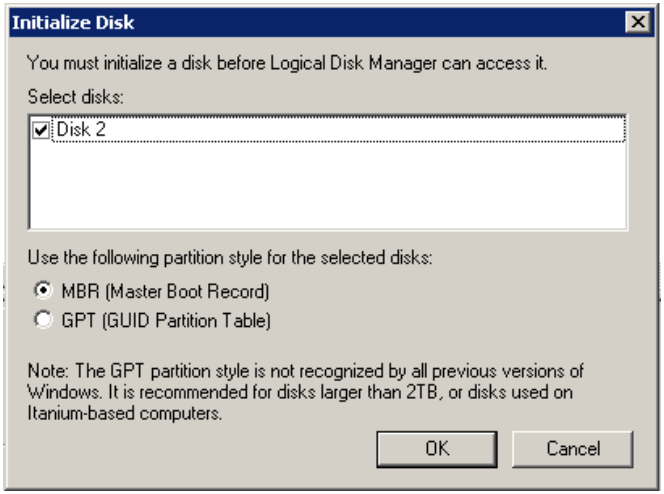
31. In Windows, do the following:

    a. Right-click on **Computer**, and select **Manage**.

       The Computer Management dialog box opens.

    b. In the Storage tree, select **Disk Management**.

       The Initialize Disk dialog box opens.


Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
Disk 2
Use the following partition style for the selected disks:
MBR (Master Boot Record)
GPT (GUID Partition Table)
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disks used on Itanium-based computers.
OK
Cancel

32. In the Initialize Disk dialog box, do the following:

    a. Make sure **Disk 2** is selected.

    b. Select the **GPT (GUID Partition Table)** option.

    c. Click **OK**.

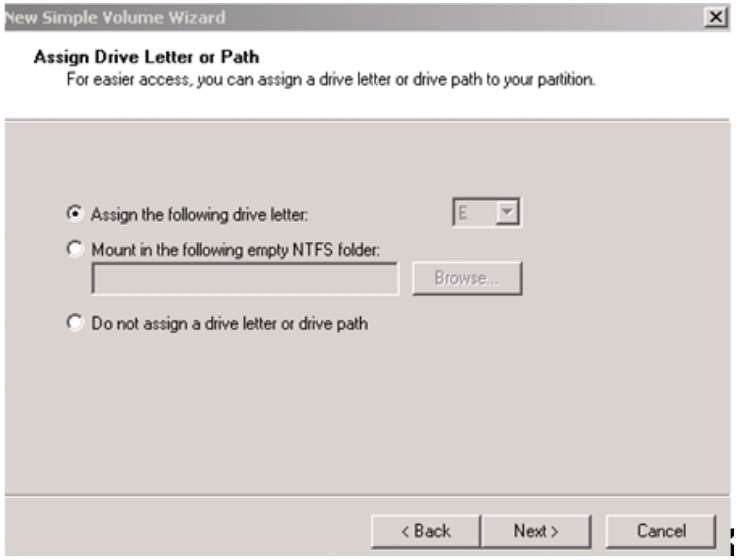
33. In **Computer Management > Storage > Disk Management**, right click on the new Unallocated Drive space for Disk 2, and select **New Simple Volume**.

34. Click **Next** on the volume wizard screen.

    The Volume Size dialog box opens. It should show **3813146 MB** for the volume size.

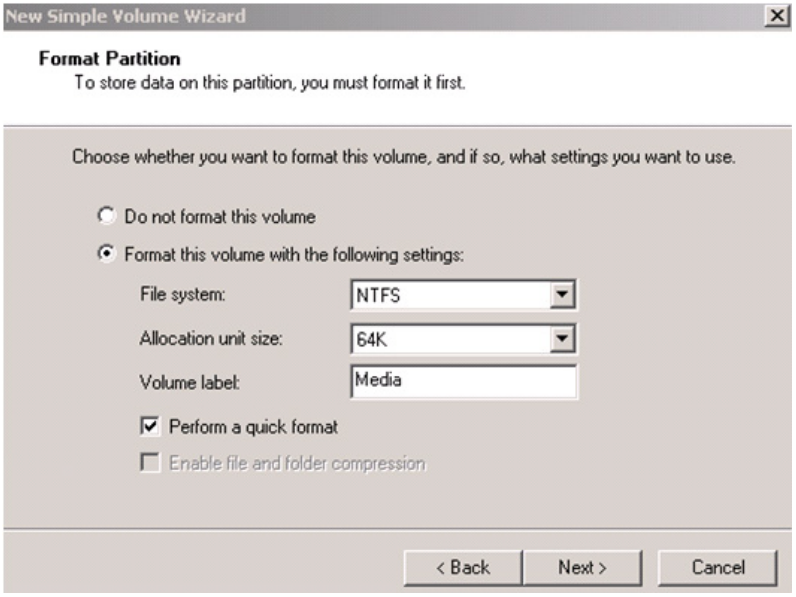
35. Click **Next**.

    The Assign Drive Letter or Path dialog box opens.


New Simple Volume Wizard
Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.
Assign the following drive letter:
E
Mount in the following empty NTFS folder:
Browse...
Do not assign a drive letter or drive path
< Back
Next >
Cancel

36. In the "Assign the following drive letter" field, make sure the drive letter is set to "**E**" and click **Next**.

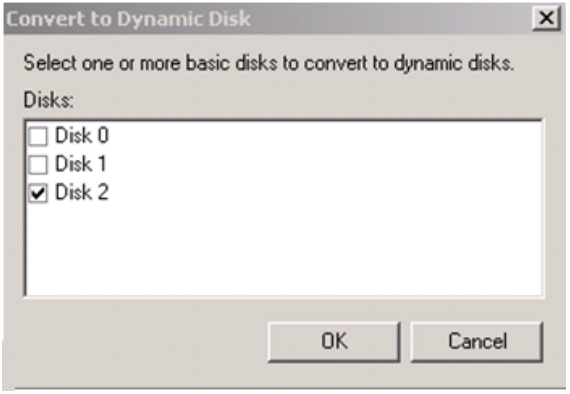
    The Format Partition dialog box opens.


New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
NTFS
Allocation unit size:
64K
Volume label:
Media
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

37. In the Format Partition dialog box, do the following:
    a. Select the “Format this volume with the following settings” option.
    b. Set the Allocation unit size to **64K**.
    c. Change the Volume label to **Media**.
    d. Make sure the “**Perform a quick format**” check box is selected.
    e. Click **Next**.
38. Click **Finish**.

    After the format is complete, the drive should show Healthy (Primary Partition).
39. Right-click on the **Disk 2** drive icon, and select **Convert to Dynamic Disk** from the list.

    The Convert to Dynamic Disk dialog box opens.



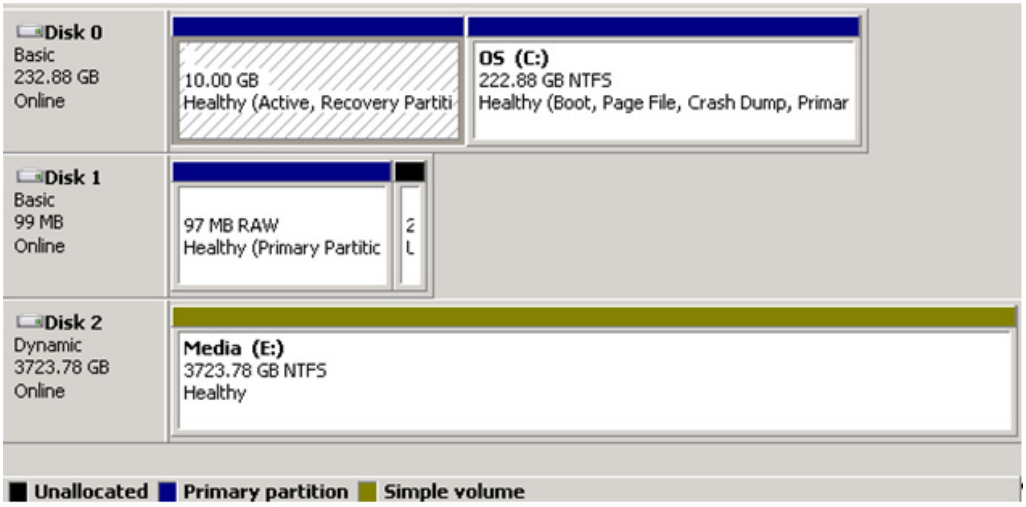
40. Make sure only **Disk 2** is selected (checked), and click **OK**.

    A Confirmation dialog box opens.
41. Click **Convert** on the Confirmation dialog box.

    A Warning message dialog box opens.

42. Click “Yes” on the Warning message dialog box.

    The following is an example of how the window should appear when you are done.



43. Close the Disk Manager.
44. Reboot the system.

    You are now done creating the new media drives.

Moving an Entire RAID Array to Another Chassis

This topic contains information on how to move an entire RAID array to another chassis.

Before scanning the foreign configuration, the Power/Activity (blue) LED for all media drives will be On solid. After import initialization, the blue LEDs on all systems will be blinking.

Before you perform this procedure, you must take your system off air, and power it down.

This procedure enables you to relocate your media drives from one AirSpeed 5000 or AirSpeed 5500 server chassis to another, and the steps for getting the drives back “Online” in the new chassis.

All screen examples in this procedure depict 4 channel model servers. Although, the screen examples are different, the basic procedure for moving entire RAID arrays to another chassis is the same for 2 channel model servers.

To move an entire RAID array to another chassis:

1. Power down the AirSpeed 5000 or AirSpeed 5500 server.
2. Remove all of the media drives from the old chassis.
3. Insert all of the media drives into the new chassis. For more information, see the topic "Removing and Replacing Media Drives (4-Channel Models)" on page 106.
4. Power on the system, and wait for the system to fully boot up.

   The system will boot up with the following message:

   "Foreign configuration(s) found on adapter

   Press any key to continue or 'C' load the configuration utility,

   or 'F' to import foreign configuration(s) and continue."
5. Press the **F** key to Import Foreign configurations (Disks).

   Windows will start.
6. Start the MegaRAID Storage Manager by selecting **Start > All Programs > MegaRAID Storage Manager > StartupUI**, or select the MegaRAID Storage Manager desktop icon.

If your AirSpeed 5000 server OS image is later than version 6, it will not have the LSI MegaRAID Storage Manager software pre-installed. Earlier AirSpeed 5000 software versions had this software pre-installed on the server. To get the latest LSI MegaRAID Storage Manager software, it is available to download under LSI's terms and conditions at ***http://www.lsi.com.***

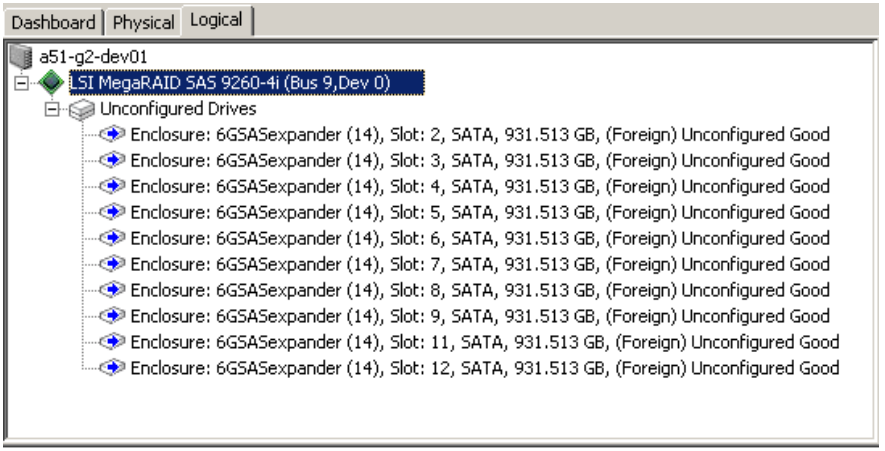
From the website, you can locate and download the latest Windows-based LSI MegaRAID Storage Manager software that supports the MegaRAID SAS 9260 4i product.

   The MegaRAID Storage Manager - Host View dialog box opens.
7. Select the IP address link of the AirSpeed 5000 or AirSpeed 5500 server in the IP Address field.

   The Enter User Name & Password dialog box opens.
8. Type the local machine login credentials.
   a. In the User Name field, type **amsuser**.
   b. In the Password field, type **is-admin**.
   c. Click **Login**.

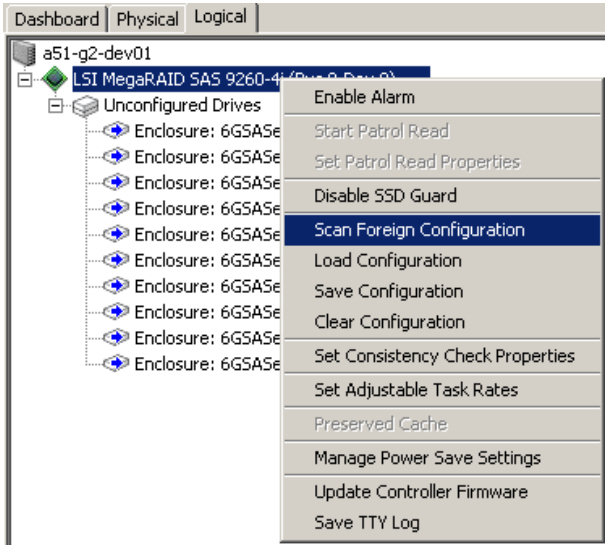
      The LSI MegaRAID Storage Manager application opens.

9. Click the **Logical** tab to determine whether the new drives you inserted appear in the Unconfigured Drives tree as Online, or Unconfigured Good.
   - If the Drives appear as Online, you are done.
   - In the Unconfigured Drives tree, if the drives appear as “Unconfigured Good”, this indicates that they are new, un-configured media drives. You need to configure them. Go to the next step.


Dashboard
Physical
Logical
a51-g2-dev01
LSI MegaRAID SAS 9260-4i (Bus 9,Dev 0)
Unconfigured Drives
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 3, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 6, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 9, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 11, SATA, 931.513 GB, (Foreign) Unconfigured Good
Enclosure: 6GSASexpander (14), Slot: 12, SATA, 931.513 GB, (Foreign) Unconfigured Good

10. Clear the existing configuration by doing the following:
    a. Right-click on the **LSI MegaRAID SAS**.
    b. Select the **Scan Foreign Configuration** option from the list

    The Foreign Configuration Detected dialog box opens.

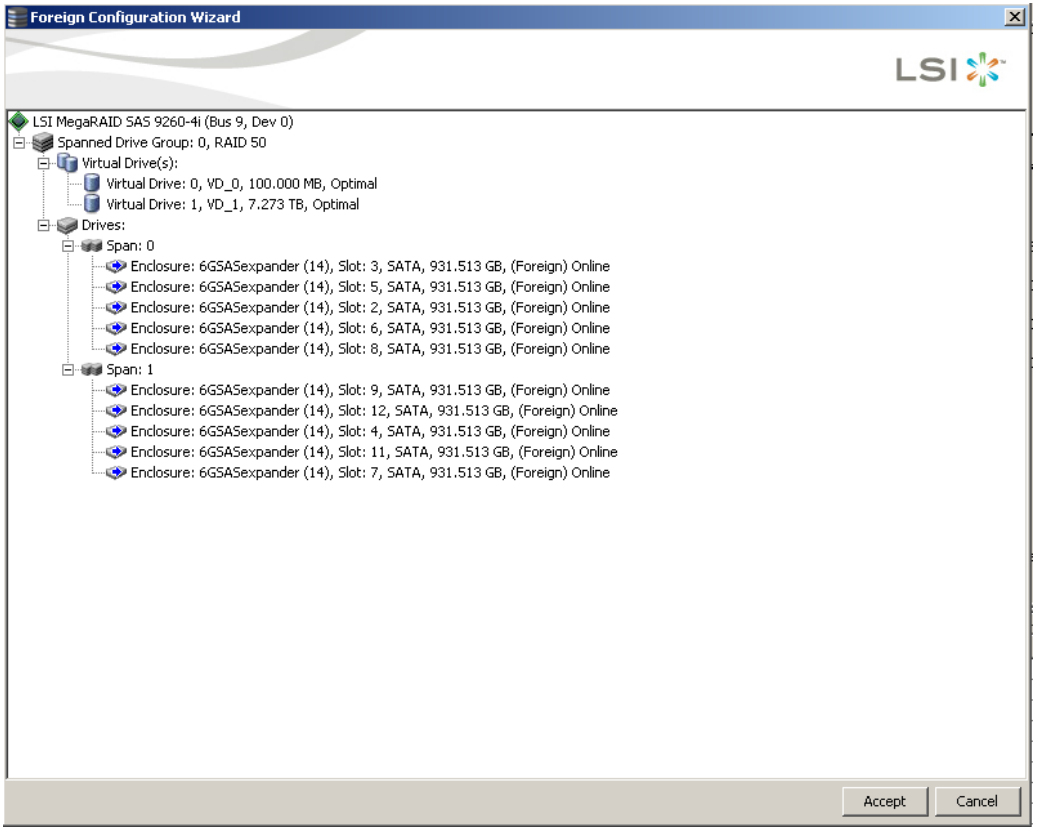


The Foreign Configuration Detected dialog box opens showing the number of foreign drives detected. This should show (10) Foreign drives for 4 channel model servers, or (5) Foreign drives for two channel model servers.

Foreign Configuration Detected
10 Foreign drives were detected. You must import or clear these drives before they can be used.
Choose an option:
Import: Import logical configuration from all foreign drives.
Clear: Remove logical configuration from all foreign drives.
Advanced: Preview, import and clear specific foreign configurations.
Ok
Cancel

11. Keep the **Import** option selected, and click **OK**.

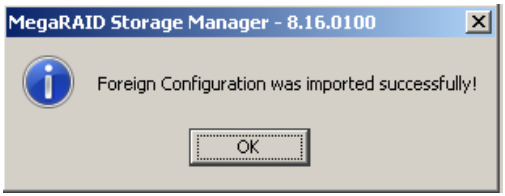
    The Foreign Configuration Wizard opens. Your 4 channel model server would look like this:


Foreign Configuration Wizard
LSI
LSI MegaRAID SAS 9260-4i (Bus 9, Dev 0)
Spanned Drive Group: 0, RAID 50
Virtual Drive(s):
Virtual Drive: 0, VD_0, 100.000 MB, Optimal
Virtual Drive: 1, VD_1, 7.273 TB, Optimal
Drives:
Span: 0
Enclosure: 6GSASexpander (14), Slot: 3, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 6, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, (Foreign) Online
Span: 1
Enclosure: 6GSASexpander (14), Slot: 9, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 12, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 11, SATA, 931.513 GB, (Foreign) Online
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, (Foreign) Online
Accept
Cancel

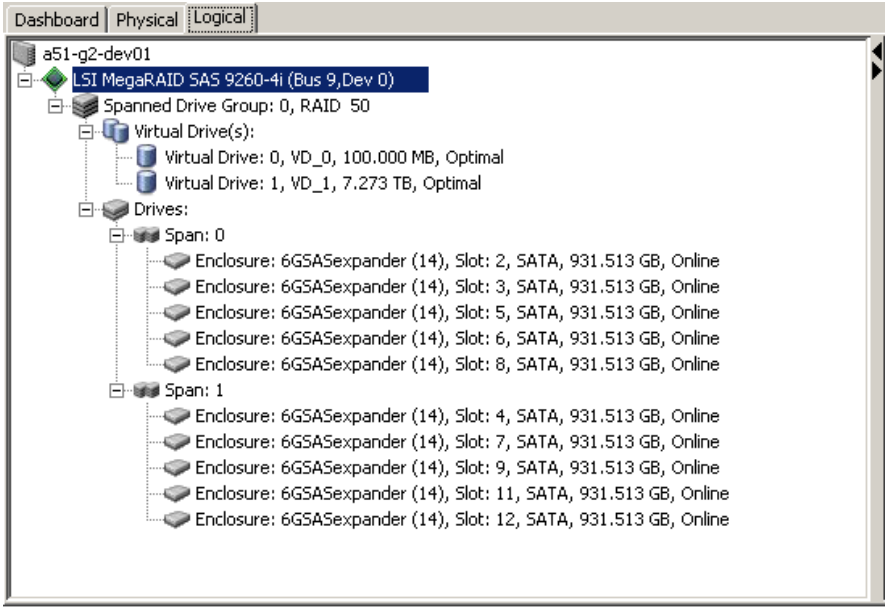
12. Click **Accept**.

    The Foreign Config - Import dialog box opens stating *"This operation cannot be reversed after it has started. Are you sure you want to import the configuration?"*

    Click **Yes** to confirm that you want to re-configure the foreign drives. Another message box appears, stating *"Foreign Configuration was imported successfully!"*



13. All disks now appear online. The following example shows the configuration of a 4 channel model server.


Dashboard
Physical
Logical
a51-g2-dev01
LSI MegaRAID SAS 9260-4i (Bus 9,Dev 0)
Spanned Drive Group: 0, RAID 50
Virtual Drive(s):
Virtual Drive: 0, VD_0, 100.000 MB, Optimal
Virtual Drive: 1, VD_1, 7.273 TB, Optimal
Drives:
Span: 0
Enclosure: 6GSASexpander (14), Slot: 2, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 3, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 5, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 6, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 8, SATA, 931.513 GB, Online
Span: 1
Enclosure: 6GSASexpander (14), Slot: 4, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 7, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 9, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 11, SATA, 931.513 GB, Online
Enclosure: 6GSASexpander (14), Slot: 12, SATA, 931.513 GB, Online

14. In Windows, do the following:
    a. Right-click on **Computer**, and select **Manage**.

       The Computer Management dialog box opens.

    b. In the Storage tree, select **Disk Management**.

       The Initialize Disk dialog box opens. You will notice that Disk 2 is in a Foreign State.

15. Right-click on **Disk 2**, and select **Import Foreign Disks...**

    The Import Foreign Disks dialog box opens.

16. Click **OK**.

    The Foreign Disk Volumes dialog box opens.

17. Click **OK**.

    You now see that Disk 2 has the Drive letter (E:).

18. Close the Disk Manager.

Replacing System Drives in the Chassis

There are two system drives installed in the AirSpeed 5000 or AirSpeed 5500 chassis.

The top drive is labelled Port 0, and the bottom drive is labelled Port 1 in the Intel Rapid Storage Technology application.

The two drives are mirrored and accessible from the rear of the chassis. If you have a failure on either one of the two system drives, you can pull the failed drive out of the chassis, and install a replacement without turning off the AirSpeed 5000 or AirSpeed 5500 server. The server continues to run properly if one of the two system drives are removed.

Before you begin, make sure you have replacement Operating System (OS) drives available for your AirSpeed 5000 or AirSpeed 5500 server. For more information on obtaining replacement system drives, see "Spares List" on page 90.

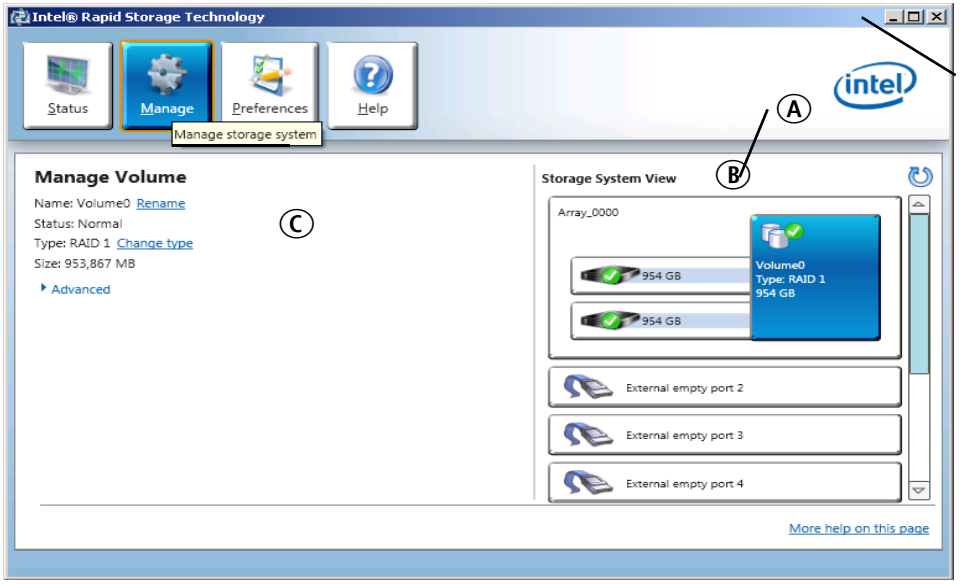
The drive carriers for the system drives are locked to avoid them from opening during shipment. The plastic drive carrier key is mounted on the rear of the chassis beside the system drives.

To replace a single failed system drive:

1. Open the Intel Rapid Storage Technology application:

   Start > All Programs > Intel > Intel Rapid Storage Technology

2. Click the **Manage** button in the application.



A. Run hardware scan button
B. Disk icons
C. Status line

3. Pull the failed drive out of the chassis and install a replacement without turning off the server. The top drive is labelled Port 0, and the bottom drive is labelled Port 1.

   Once the drive is installed, use the Intel Rapid Storage Technology application to initiate the rebuild operation as described in the following steps.

4. Click the **Run hardware scan** button (identified as A in the above illustration) to refresh the RAID data to the current state.

5. The volume icon has two smaller disk icons attached to it - one for each disk of the RAID set. Perform one of the following operations:

   - If the disk has previously been part of the RAID set, the disk appears as an icon attached to the Volume 0 icon and the application immediately begins the rebuild. You can monitor the status, in this case the status line displays “Rebuilding x% complete.”
   - If the replacement disk has never been part of this RAID set, the disk icons display a list of available disks. The Status line will display “Degraded,” and the words “rebuild to another disk” is underlined. Click on the underlined text.

6. A window opens that offers a choice of drives to add to the array. Click on the one drive that needs to be added to the RAID set. The rebuild operation begins immediately.

   You can use the Status line to monitor the status of the rebuild. The top of the screen says Manage Volume, and the status line says “Rebuilding x% complete.”

You can perform other work while the rebuild completes.

To replace both system drives:

1. If both system drives fail, shut down the system, and unplug the power cords.
2. Remove both system drives.
3. Install new system drives into the two drive carriers and insert them into the two system drive slots.
4. Replace the power cords and restart the system.
5. Enter the Intel RAID BIOS by pressing **CTRL+I** when the text MATRIX RAID BIOS appears on the screen.
6. Choose **Create the new RAID set**. This will create the system drive mirror.
   a. Change RAID type from RAID 0 Stripe to **RAID 1 Mirror** (volume name and capacity can be left at the defaults).
   b. Select **Create RAID**, answer yes to the “are you sure” messages.
   c. The RAID set (Volume 0) should be shown as online with the two physical disks (port 0 and 1) listed below as array members.
   d. Exit the RAID BIOS and allow the system to restart.
7. Turn on your AirSpeed 5000 or AirSpeed 5500 server and re-image your system drives which includes loading the Windows operating system, see the topic “Reimaging Your System” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.

Use the same IP address previously assigned.

8. Install the Avid AirSpeed 5000 software on the new system drives, see “Installing the Software” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
9. Configure your system.

Moving System (OS) and Media Drives to a Different System

This topic contains information on how to move your System (OS) and Media drives to a new system, and how to deactivate your licenses before doing so.

If Customer Service detects a potential hardware problem or defect with your AirSpeed 5000 or AirSpeed 5500 server, they might recommend that you send the system back to Avid for evaluation. In this case, you could retain the information on your system (OS) and media drives by moving them to a different system.

If the System (OS) drives or media drives are swapped or re-imaged, the information containing the licenses is removed. Therefore, you must deactivate all active licenses before performing this procedure.

To move System (OS) and Media drives to a different system:

1. Deactivate all Active licenses using the De-activation page of the AirSpeed 5000 Management Console. For more information, "The Deactivation Page" on page 77.
2. Power down your old server.
3. Remove the System (OS) and media drives from the old server, and replace them in the new server. For more information, see the following topics:
   - "Replacing System Drives in the Chassis" on page 157
   - "Removing and Replacing Media Drives (4-Channel Models)" on page 106
4. Place the System ID sticker from the old server over the System ID on the new server that you are moving the drives to.

You will need to keep the old System ID with the new server. This is because all previously activated licenses are linked to this System ID. If you try to use the new System ID, you will get an error message saying that the license has already been activated with a different System ID.

5. Start up the server and configure it following the instructions in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
6. When the system is configured, open the AirSpeed 5000 Management Console and make sure that the System ID in the Server Mode page reflects the System ID of the original server that you replaced.
7. Close the AirSpeed 5000 Management Console.

Removing and Replacing the Server Main Cover

The AirSpeed 5000 or AirSpeed 5500 server must be operated with the chassis cover in place to ensure proper cooling. However, you will need to remove the main cover to add or replace components inside of the server (Video I/O board set). Before removing the main cover, power down the server and unplug all peripheral devices and the AC power cables.

A nonskid surface or a stop behind the server may be needed to prevent the server from sliding on your work surface.

To remove the server main cover:

1. Observe the safety precautions described in "Electrostatic Discharge Precautions" on page 95 and "Safety and Regulatory Information" in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
2. Turn off all peripheral devices connected to the server. Then, turn off the server.
3. Disconnect the AC power cords.
4. Unscrew the thumbscrews at the back of the unit until they are loose.
5. Pull the thumbscrews backwards and slide the main cover until it hits the tabs.
6. Remove the main cover and set in a safe place.

To replace the server main cover:

1. Place the main cover over the server system so that the side edges of the cover sit just outside the server system sidewalls.
2. Slide the main cover forward until it fits in place.
3. Tighten the rear thumbscrews.
4. Reconnect all peripheral devices and the AC power cords.

Replacing Power Modules

The AirSpeed 5000 or AirSpeed 5500 server is designed to run with two operating power modules. A power module can be replaced if it fails. If a power module fails, the LED on the power module and the front panel LED turn red and a beeping alarm sounds. The alarm is not configurable.

A power module is only hot-swappable if the other power module is operational. If you only have one power module working, before removing or replacing that power module, you must first take the server out of service, turn off all peripheral devices connected to the system, and turn off the server by powering it off from the Start menu. Once it is powered off, unplug the AC power cord from the system or AC outlet.

Avid recommends the use of uninterruptible power supplies, appropriately sized for your AirSpeed 5000 or AirSpeed 5500 server. This provides protection against sudden power surges or losses that could cause you to lose files or experience data corruption. For more information, see "Uninterruptible Power Supply (UPS)" in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.

To replace a power module:

1. Observe the safety precautions described in "Electrostatic Discharge Precautions" on page 95.
2. Make sure you have a replacement or spare power module before you continue with the procedure.
3. Power down the server and unplug all peripheral devices and the AC power cables.

The power module must be unplugged before you remove it.

4. Push the latch towards the handle and remove the power module by pulling on the handle.

Removing a Power Module

A. Latch
B. Handle

5. Insert the replacement power module (7020-30552-00) into the power supply cage until it clicks into place.
6. Reconnect all peripheral devices and the AC power cords into the server.

The server will automatically power up without having to turn on the Power switch.

Identifying and Replacing Failed Fans

In the event that you have one or more fan failures, you can replace them. First, you must identify which fan has failed. Then, once you know which fan it is, you need to figure out when you can replace it.

The system does not need to be taken offline or powered down before replacing fans.

In the event that two (2) or more fans fail, the system will shut down.

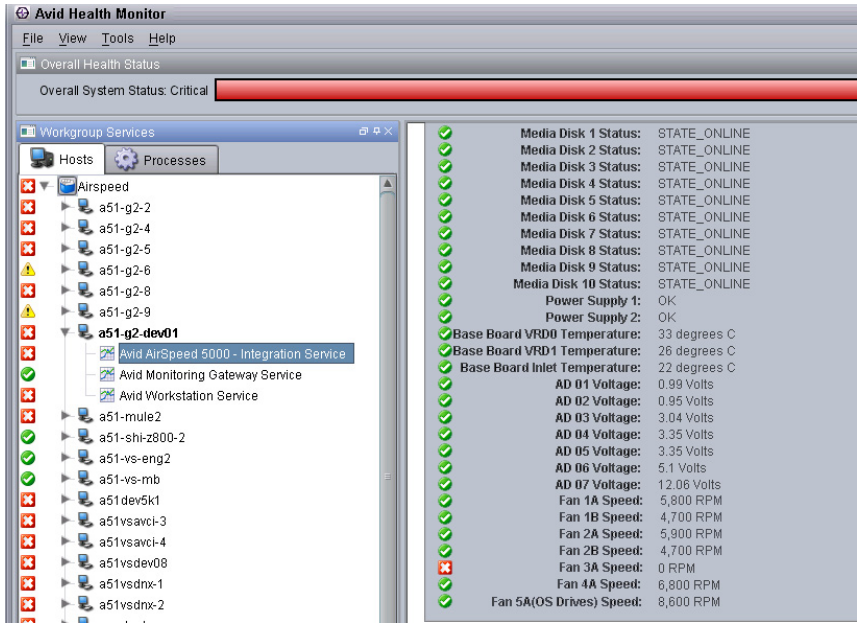
When replacing a Fan module that contains two fans (e.g., 1A/1B, or 2A/2B), do not remove the "failing" fan module (one fan is still working), until you have the replacement. Once you remove the old Fan module for replacement, you need to insert the replacement within one (1) minute, or else the system will shut down.

Before you begin, you must obtain replacement fans for your AirSpeed 5000 or AirSpeed 5500 server. For more information, see "Field Replaceable Parts" on page 91.

To identify and replace failed fans:

1. Observe the safety precautions described in "Electrostatic Discharge Precautions" on page 95 and "Safety and Regulatory Information" in the AirSpeed 5000 / AirSpeed 5500 Setup Guide.
2. Identify which fan has failed by doing the following:
   a. Open the Health Monitor.
   b. Locate your server, and expand the list.
   c. Select Avid AirSpeed 5000 - Integration Service.
   d. In the Hardware Status area, scroll to the "Fan Speed" area, and if you notice a red "**x**" and "0 RPM" next to any of the fans, it indicates a failed fan. The list in the Health Monitor maps to the actual Fan modules as follows:
      - Fan 1A Speed - Fan module 1A/1B
      - Fan 1B Speed - Fan module 1A/1B
      - Fan 2A Speed - Fan module 2A/2B
      - Fan 2B Speed - Fan module 2A/2B
      - Fan 3A Speed - Fan module 3A
      - Fan 4A Speed - Fan module 4A
      - Fan 5A (OS Drives) Speed - Fan module 5A

The following is an example showing a red **x** next to the Fan 3A Speed and “0 RPM”. This indicates Fan 3A has failed and must be replaced:

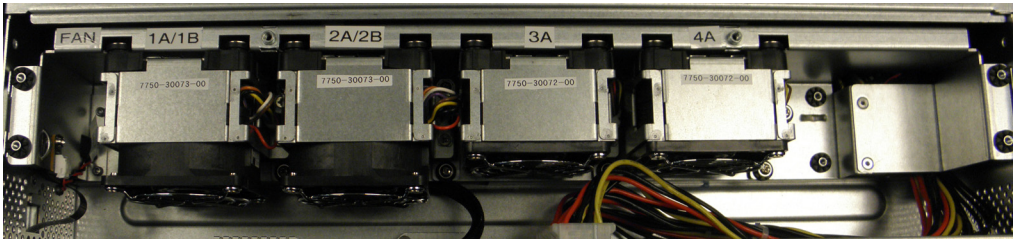


3. Remove the Fan cover on the AirSpeed 5000 or AirSpeed 5500 server by doing the following:

   a. Remove the two (2) set screws from the top of the chassis.

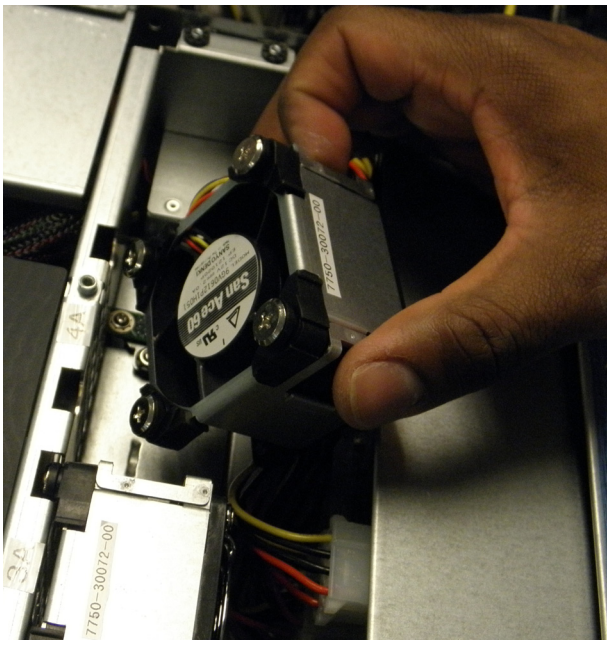
   b. Pull the blue pull tabs away from the chassis, and lift the fan cover out of the chassis.

      The following is an example of Fans 1A/1B, 2A/2B, 3A, and 4A:



4. Remove the failed fan. Depending on which fan has failed, do one of the following:
   - For Fans 1A/1B, 2A/2B, 3A, and 4A, do the following:
   - Lift the appropriate failed fan out of the chassis.
   - Take the replacement fan, and line up the top and bottom of the fan with the guides, and push it down into position.

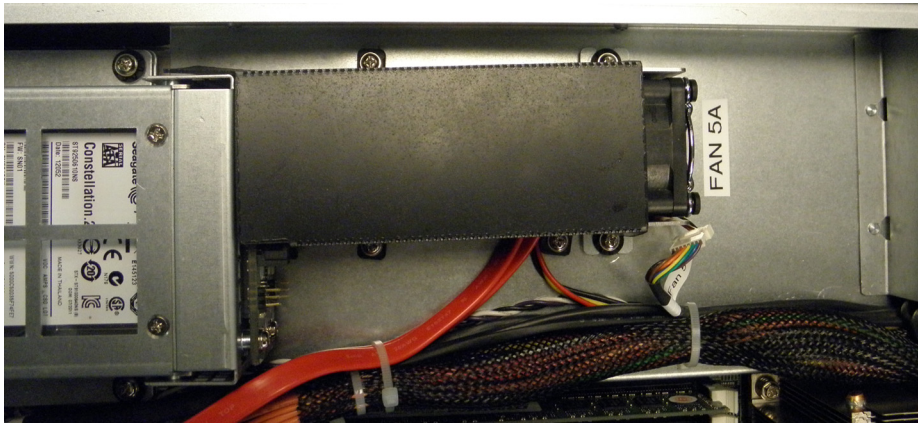
     The following is an example of fan 4A being replaced:



   - Go to Step 7.
   - For Fan 5A, the process is more involved. Go to Step 5.

5. To remove Fan 5A, do the following:

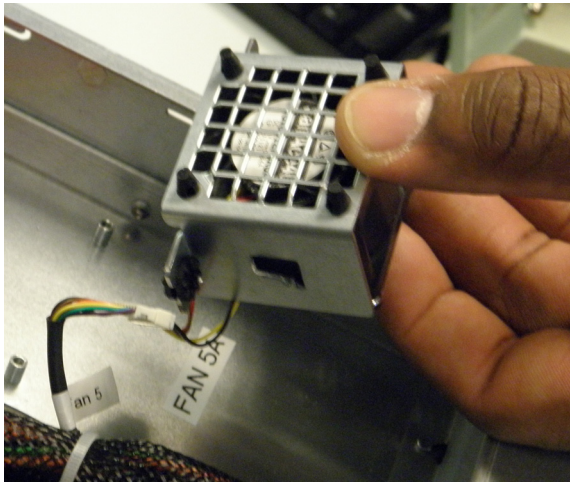
   a. Remove the back cover by removing the top two (2) thumbscrews on the rear of the server chassis. Then, you can have access to Fan 5A, as shown in the following illustration:



   b. Using a #2 Phillips screwdriver long enough to reach into the chassis, remove the three (3) screws that hold down the Fan shroud.

   c. Remove the two (2) screws that hold down the fan.

   d. Pull the fan out of the chassis, and remove the Power harness attached to the fan.



   e. Remove the fan from the chassis.

6. To replace Fan 5A, do the following:
   a. Attach the Power harness to the new fan.
   b. Replace the two (2) screws to secure the fan back in place.
   c. Replace the Fan shroud over the fan,
   d. Use the #2 Phillips screwdriver to replace the three (3) screws to secure the Fan shroud.
   e. Replace the back cover, and tighten the two (2) thumbscrews.
7. Replace the Fan cover by doing the following:
   a. Slide the fan cover over its slot.
   b. Pull the tabs, and release them when they fit in their slots.
   c. Replace the two (2) set screws.
8. Reconnect all peripheral devices and the AC power cords into the server.

Identifying and Replacing Failed Video I/O Boards

In the event that one of your Video I/O boards fails, you can replace it. First, you must identify which board failed. Then, once you know which board has failed, you need to figure out when you can replace it.

The system should be taken offline and powered down before replacing bad Video I/O boards.

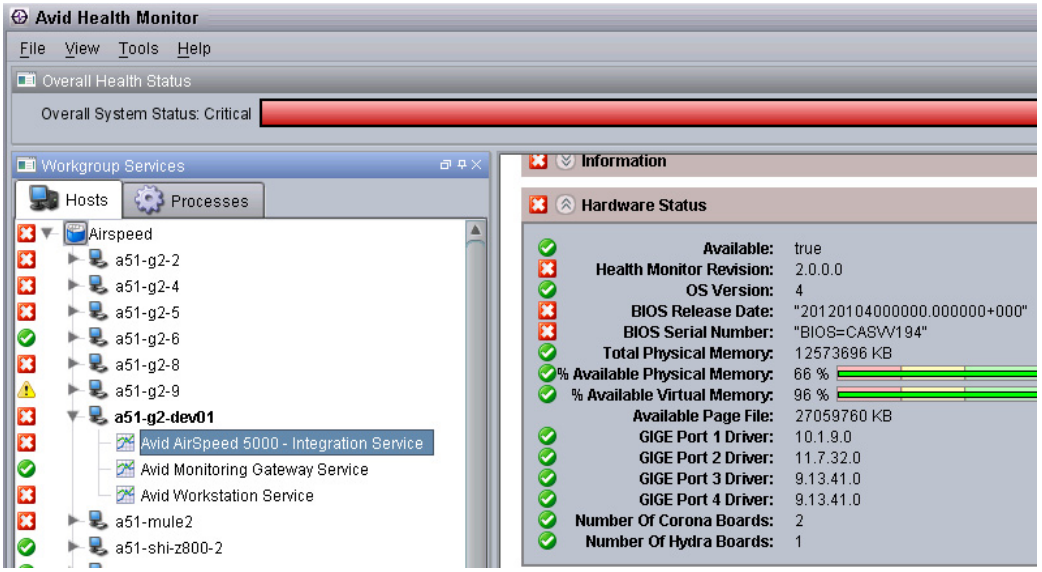
Before you begin, you must obtain replacement VIO boards. For more information, see “Field Replaceable Parts” on page 91.

To identify a failed Video I/O board:

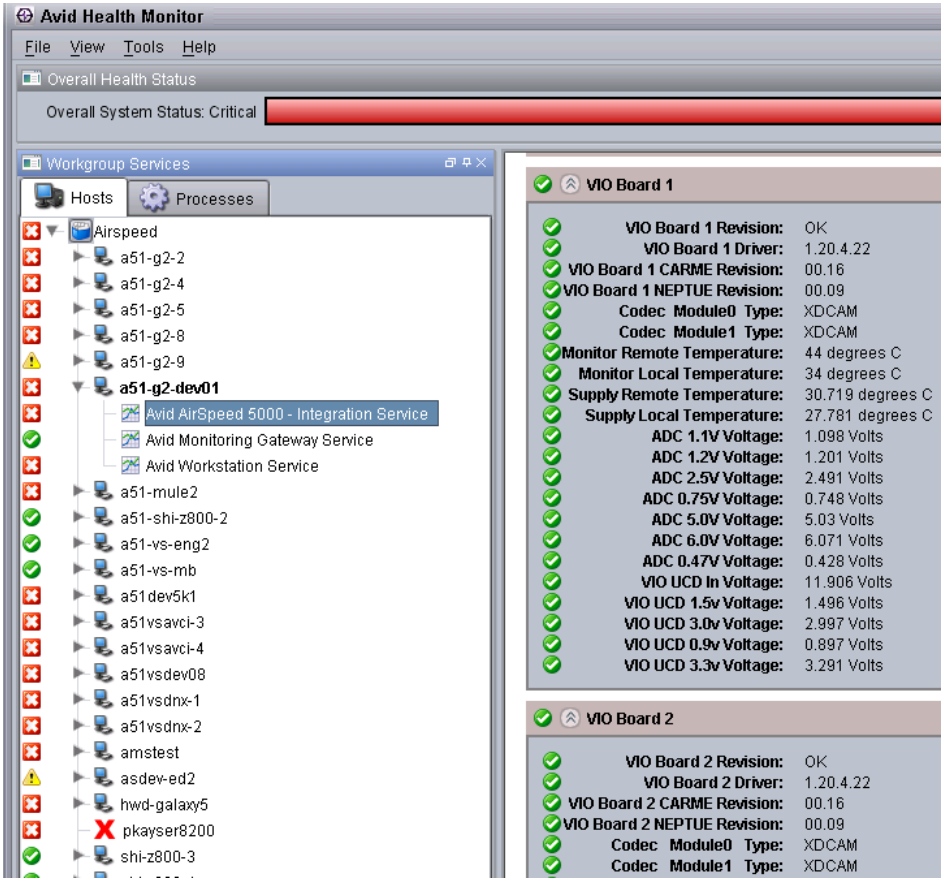
1. Determine which Video I/O board you are removing by doing one of the following:
   a. Open Health Monitor.
   b. Locate your server, and expand the list.
   c. Select Avid AirSpeed 5000 - Integration Service.

d. Do the following:

- In the Hardware Status area, scroll to the “Number of Corona Boards:” field. It should indicate two (2). Otherwise, there is a problem with your system.



- In the “VIO Board 1 and VIO Board 2 areas, make sure VIO Board 1 and VIO Board 2 are healthy (all green check marks). Otherwise, there is a problem with your system.



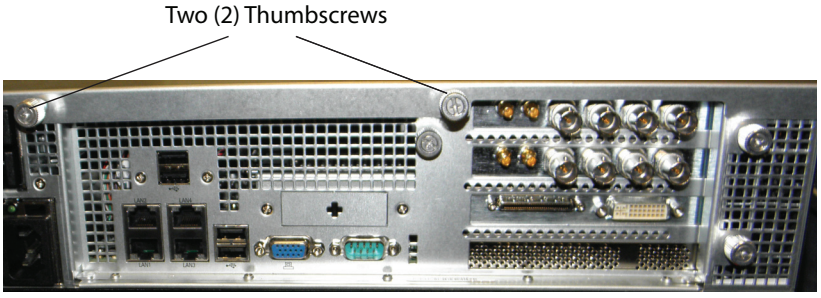
2. Note the following Video I/O board locations:
   - VIO 1 - This is the top Video I/O board in the chassis
   - VIO 2 - This is the bottom Video I/O board in the chassis.
3. You can now remove the failed Video I/O board from the chassis.

To remove failed VIO boards:

1. Observe the safety precautions described in “Electrostatic Discharge Precautions” on page 95 and “Safety and Regulatory Information” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
2. Power down the server and unplug all peripheral devices and the AC power cables.

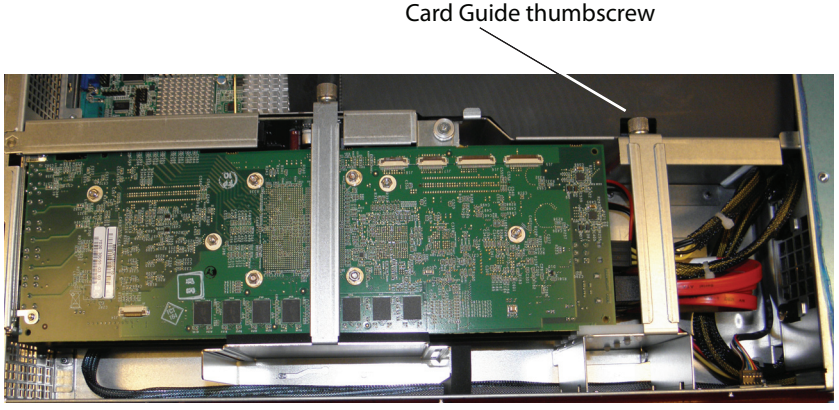
3. Remove the server cover. For instructions, see “Removing and Replacing the Server Main Cover” on page 161.
4. Disconnect any cables attached to any add-in cards.
5. Loosen the thumbscrews on the back cover, and slide the cover back to remove it from the chassis.

   The following diagram shows the location of the two (2) thumbscrews on the rear of the server.

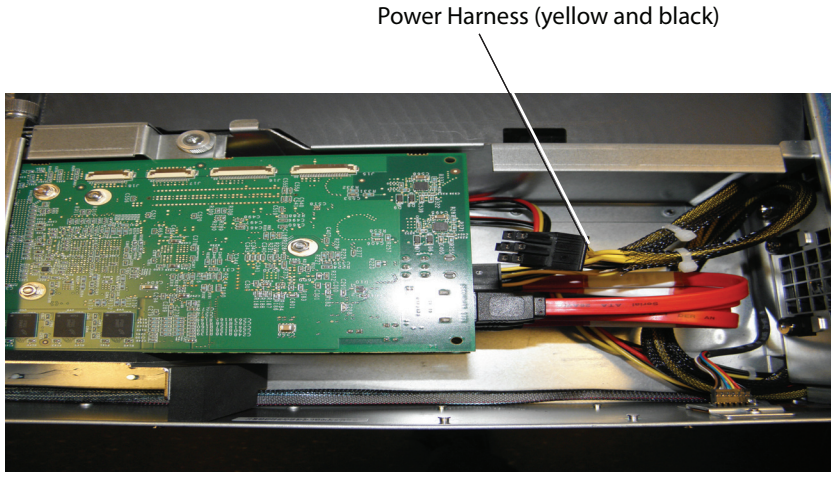


6. Loosen the thumbscrew on the card guide, and slide it over to remove it from the chassis.

   The following diagram shows the location of the Card guide thumbscrew.

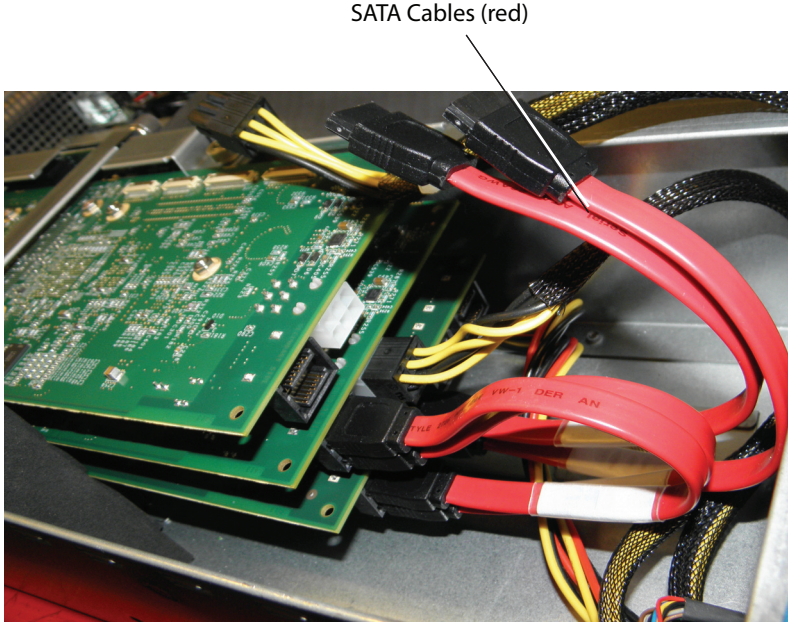


7. To remove the top Video I/O board 1 (VIO 1), do the following:
   a. Remove the Power Harness (yellow and black cable) from the Video I/O board.

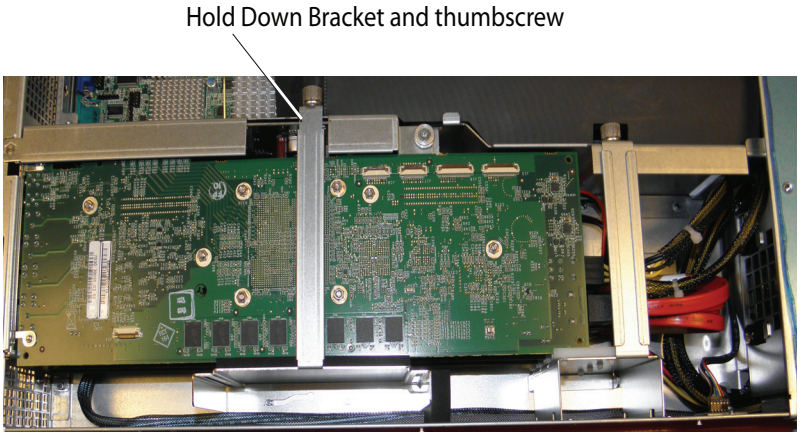


   b. Remove the two SATA (red) cables from the Video I/O board.

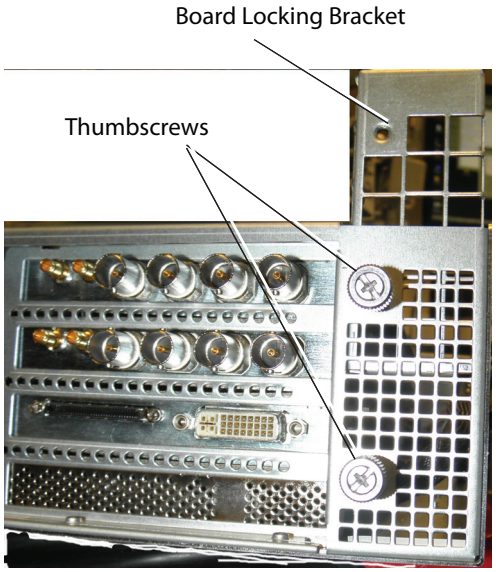
Before removing the SATA cables, it's a good idea to observe how the SATA cables are connected (Top to Top, and Bottom to Bottom)



8. (Option) If you are replacing VIO 2, repeat Step 7 to remove the bottom Video I/O board VIO 2).
9. Release the Hold Down Bracket using the thumbscrews, and then slide it out of the chassis.



10. Remove the Board Locking Bracket by loosening the thumbscrews, and sliding the bracket up, and out of the chassis.

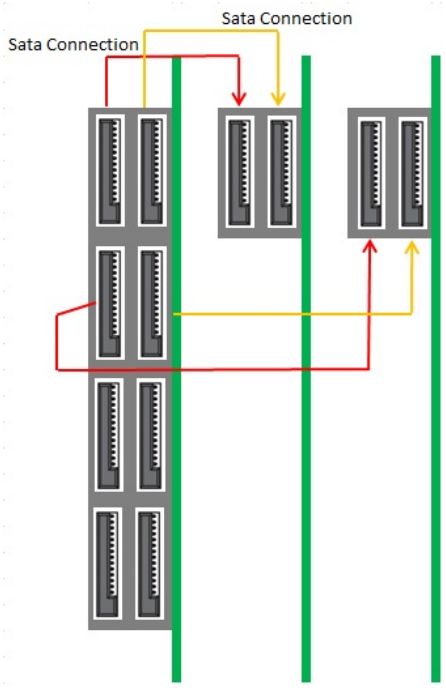


11. Gently lift the top Video I/O board (VIO 1) off of the riser card and out of the chassis.
12. (Option) If you are replacing VIO 2 (the bottom board), repeat Step 11.
13. The next step is to insert the new Video I/O board into the server.

To replace VIO boards:

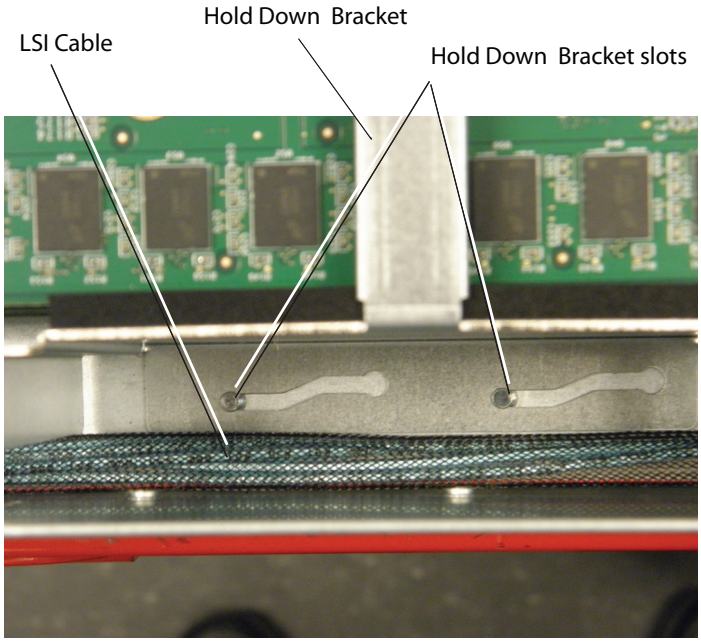
1. Observe the safety precautions described in “Electrostatic Discharge Precautions” on page 95 and “Safety and Regulatory Information” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
2. (Option) If you have removed VIO 2 (the bottom board), gently replace the bottom Video I/O board (VIO 2) into the riser card.
3. Gently replace the top Video I/O board (VIO 1) into the riser card.
4. Replace the Board Locking Bracket back down into its slot, and tighten the thumbscrews.
5. For each VIO board (VIO 1, VIO 2) that you replaced, reattach the SATA and Power cables to the board as follows:
   a. Reattach the Power Harness (yellow and black cable) to the Video I/O board.
   b. Reattach the two SATA (red) cables to the Video I/O board.

   Make sure the SATA cables are connected (Top to Top, and Bottom to Bottom)



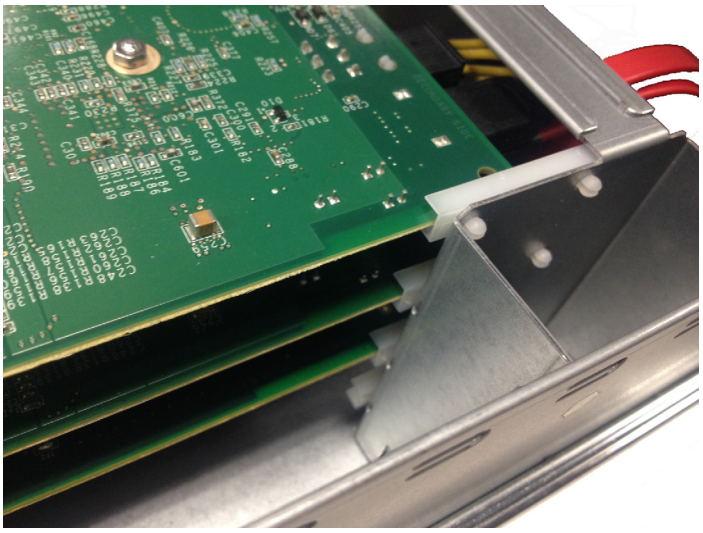
6. Replace the Hold Down Bracket by sliding it back into place. Once in place, tighten the thumbscrews.

Lift the LSI cable that goes along the side of the chassis, so that the Hold Down bracket sits at the bottom of the chassis in its slot, then, tighten the thumbscrews.



7. Reattach the Card guide, and tighten the thumbscrews.

When reattaching the Card guide, make sure the Video I/O boards and Hydra card (bottom), are secured in their respective slots.



8. (Option) Reattach any cables that were removed from any add-in cards.
9. Replace the server cover, and tighten the thumbscrews. For more information, see "Removing and Replacing the Server Main Cover" on page 161.
10. Reconnect all peripheral devices and the AC power cords into the server.
11. Power up the server.

Accessing the Knowledge Base

The Avid Customer Support Knowledge Base (Knowledge Base) provides additional information that is frequently updated.

Some locations on the Knowledge Base require you to log in as a registered user, but you can access most of the information in the Knowledge Base without registering and logging in.

To access the Knowledge Base:

1. Go to www.avid.com.
2. Click Support & Services
3. Type your search criteria into the Search the Knowledge Base, and click the Search button.
4. (Option) Click Login.

If you are not already a registered user of the Knowledge Base, click Register and follow the on-screen registration instructions to register now. Registered users can access more information.

5. Search for the information you need.

3 Upgrading Your AirSpeed 5000 or AirSpeed | 5500 Server Hardware

This chapter contains information on how to upgrade your AirSpeed 5000 or AirSpeed 5500 server's hardware with the MPEG-2 HD or AVC-Intra codec modules you received in your AirSpeed 5000 / AirSpeed 5500 Hardware Upgrade kit.

Upgrading your AirSpeed 5000 or AirSpeed 5500 server hardware specifically involves removing the Video I/O boards, and attaching two (2) MPEG-2 HD or AVC-Intra codec modules to each Video I/O board, and then replacing the Video I/O boards in the server.

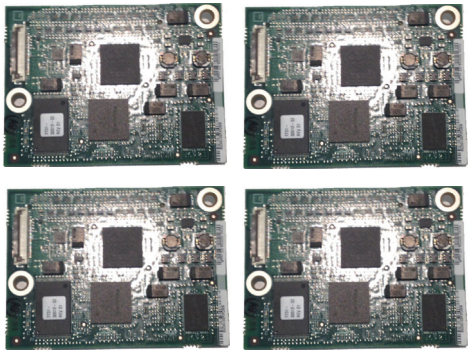
The following topics are available:

- AirSpeed 5000 / AirSpeed | 5500 Hardware Upgrade Kits
- Electrostatic Discharge Precautions
- AirSpeed 5000 / AirSpeed 5500 Server Hardware Upgrade Checklist
- Performing System Diagnostics

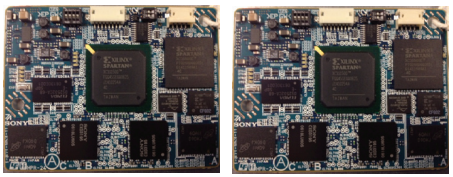
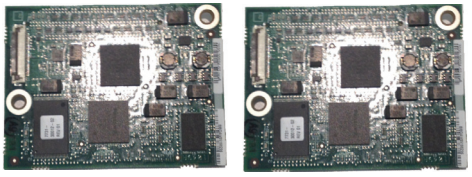
AirSpeed 5000 / AirSpeed | 5500 Hardware Upgrade Kits

There are four different AirSpeed 5000 / AirSpeed 5500 Server Hardware Upgrade kits (two are for 4-channel models, and two are for 2-channel models) that can be purchased to enhance the hardware capabilities and functionality of your system. They are described in the table below.

AirSpeed 5000 / AirSpeed 5500 Hardware Upgrade Kit List

Upgrade Kit Name
MPEG-2 HD Upgrade Kit (4-channel) This kit includes four (4) MPEG-2 HD modules (two (2) for each Video I/O board)
AVC-Intra Upgrade Kit (4-channel) This kit includes four (4) AVC-Intra modules (two (2) for each Video I/O board) 

AirSpeed 5000 / AirSpeed 5500 Hardware Upgrade Kit List

Upgrade Kit Name
MPEG-2 HD Upgrade Kit (2-channel) This kit includes two (2) MPEG-2 HD modules (one (1) for each Video I/O board) 
AVC-Intra Upgrade Kit (2-channel) This kit includes two (2) AVC-Intra modules (one (1) for each Video I/O board) 

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can damage disk drives, cards, and other parts. Avid recommends that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface) on your server when handling parts.

ESD and handling PCIe Cards

Always handle cards carefully. They can be extremely sensitive to ESD. Hold cards only by their edges. After removing a card from its protective wrapper or from the server, place the card component side up on a grounded, static free surface. Use a conductive foam pad if available but not the card wrapper. Do not slide the card over any surface.

AirSpeed 5000 / AirSpeed 5500 Server Hardware Upgrade Checklist

This checklist contains the necessary tasks required to upgrade your AirSpeed 5000 or AirSpeed 5500 server hardware.

- ❑ Remove the Server main cover as described in the topic "Removing and Replacing the Server Main Cover" on page 180.
- ❑ Remove the Video I/O board(s) from the server. Depending on your model (2-channel or 4-channel), you would go to one of the following topics:
  - For 4-channel models, you must remove both Video I/O boards.
  - For 2-channel models, you only need to remove one Video I/O board.

  For more information, see the topic "Removing the Video I/O Boards" on page 181.
- ❑ Attach the two (2) Codec modules from your kit to each Video I/O board, as described in the topic "Attaching the Codec Modules to the Video I/O Boards" on page 185.

  Note that 2-channel model systems only have one Video I/O board.
- ❑ Replace the Video I/O boards into the server, as described in the topic "Replacing the Video I/O Boards into the Chassis" on page 186.
- ❑ Replace the Server main cover as described in the topic "Removing and Replacing the Server Main Cover" on page 180.
- ❑ Perform hardware system diagnostics, as described in the topic "Performing System Diagnostics" on page 190.

Removing and Replacing the Server Main Cover

The AirSpeed 5000 or AirSpeed 5500 server must be operated with the chassis cover in place to ensure proper cooling. However, you will need to remove the main cover to add or replace components inside of the server (Video I/O board set). Before removing the main cover, power down the server and unplug all peripheral devices and the AC power cables.

A nonskid surface or a stop behind the server may be needed to prevent the server from sliding on your work surface.

To remove the server main cover:

1. Observe the safety precautions described in “Electrostatic Discharge Precautions” on page 179 and “Safety and Regulatory Information” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
2. Turn off all peripheral devices connected to the server. Then, turn off the server.
3. Disconnect the AC power cords.
4. Unscrew the thumbscrews at the back of the unit until they are loose.
5. Pull the thumbscrews backwards and slide the main cover until it hits the tabs.
6. Remove the main cover and set in a safe place.

To replace the server main cover:

1. Place the main cover over the server system so that the side edges of the cover sit just outside the server system sidewalls.
2. Slide the main cover forward until it fits in place.
3. Tighten the rear thumbscrews.
4. Reconnect all peripheral devices and the AC power cords.

Removing the Video I/O Boards

In order for you to insert the Codec modules onto Video I/O boards, you must first remove the Video I/O board(s) from the AirSpeed 5000 or AirSpeed 5500 server.

For 4-channel model servers, you must remove both Video I/O boards.

For 2-channel model servers, you only have to remove the single (top) video I/O board.

For future reference, note the following Video I/O board locations:

- VIO 1 is the top Video I/O board in the chassis
- VIO 2 is the bottom Video I/O board in the chassis.

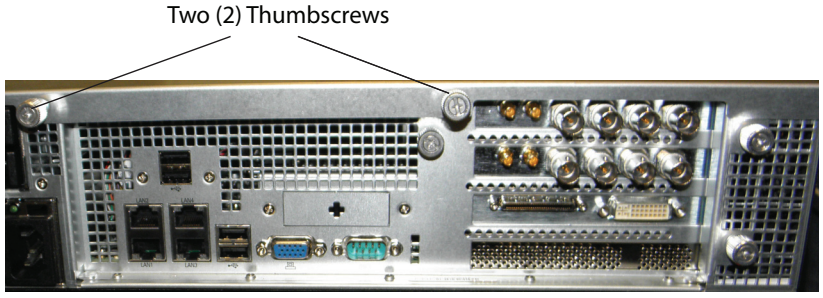
The system should be taken offline and powered down before removing Video I/O boards.

Before you begin, make sure you have the correct Hardware Upgrade kit available. For more information, see “AirSpeed 5000 / AirSpeed | 5500 Hardware Upgrade Kits” on page 178.

To remove both VIO boards from the chassis:

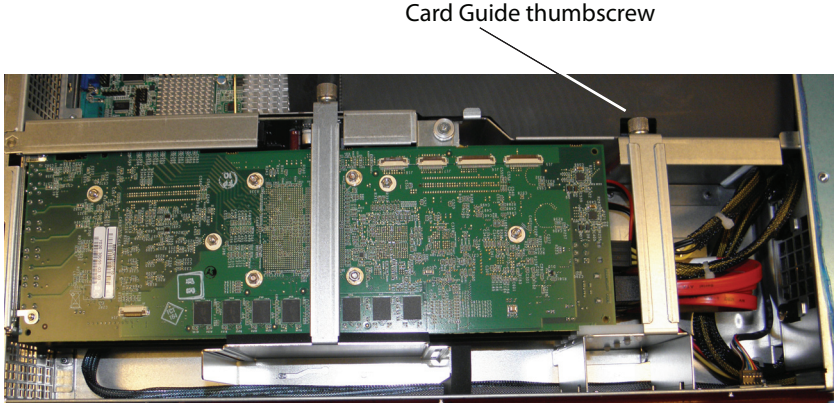
1. Observe the safety precautions described in “Electrostatic Discharge Precautions” on page 179 and “Safety and Regulatory Information” in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
2. Power down the server and unplug all peripheral devices and the AC power cables.
3. Remove the server main cover. For instructions, see “Removing and Replacing the Server Main Cover” on page 180.
4. Disconnect any cables attached to any add-in cards.
5. Loosen the thumbscrews on the back cover, and slide the cover back to remove it from the chassis.

   The following diagram shows the location of the two (2) thumbscrews on the rear of the server.

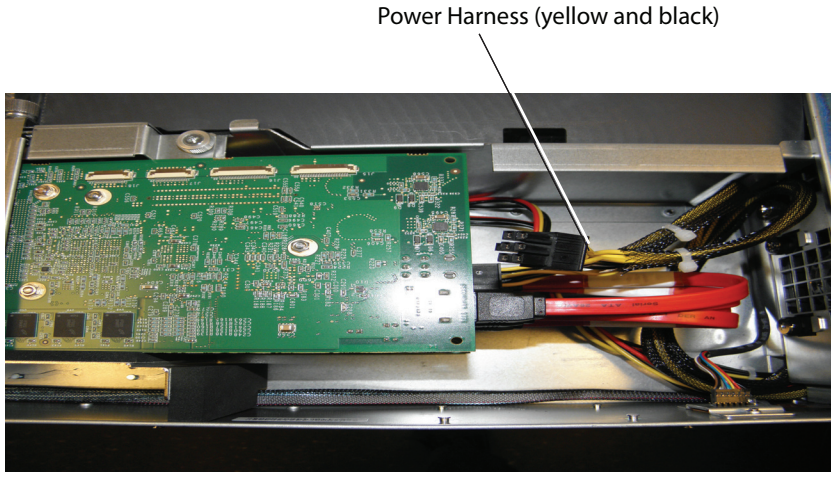


6. Loosen the thumbscrew on the Card guide, and slide it over to remove it from the chassis.

   The following diagram shows the location of the Card guide thumbscrew.

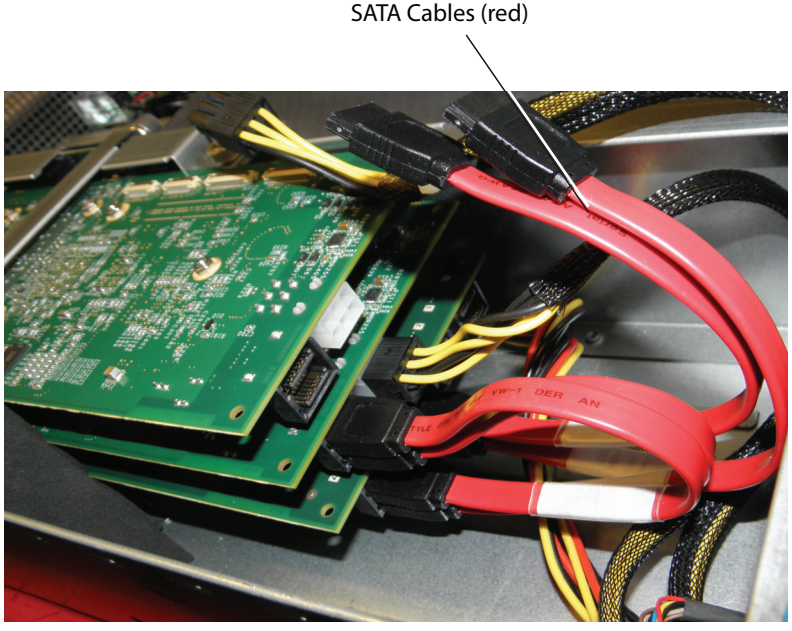


7. To disconnect the top Video I/O board 1 (VIO 1), do the following:
   a. Remove the Power Harness (yellow and black cable) from the Video I/O board.

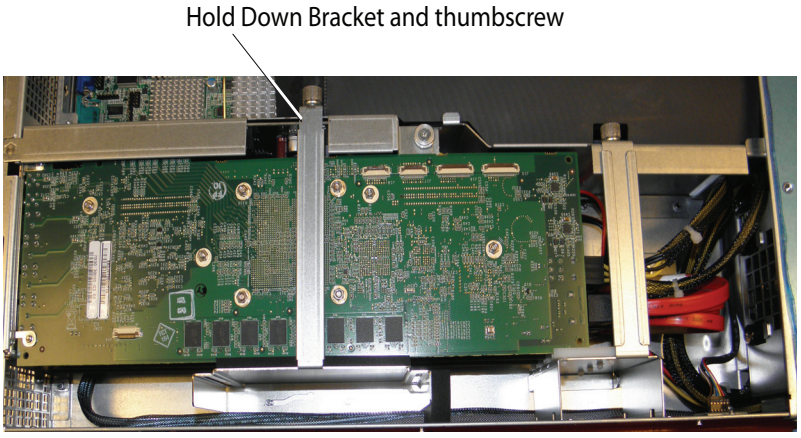


   b. Remove the two SATA (red) cables from the Video I/O board.

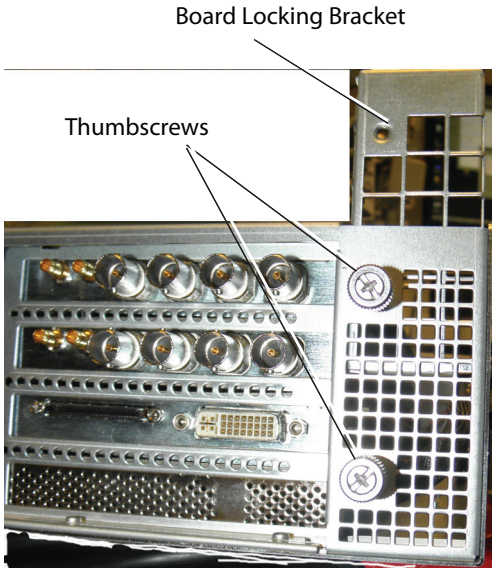
Before removing the SATA cables, it's a good idea to observe how the SATA cables are connected (Top to Top, and Bottom to Bottom)



8. (Option: For 4-channel model servers) Repeat Step 7 to disconnect the bottom Video I/O board (VIO 2).
9. Release the Hold Down Bracket using the thumbscrews, and then slide it out of the chassis.



10. Remove the Board Locking Bracket by loosening the thumbscrews, and sliding the bracket up, and out of the chassis.



11. Gently lift the top Video I/O board (VIO 1) off of the riser card and out of the chassis.
12. (Option: For 4-channel model servers) Gently lift the bottom Video I/O board (VIO 2) off of the riser card and out of the chassis.

13. The next step is to attach the Codec modules onto each Video I/O board that was removed. Fro more information, see "Attaching the Codec Modules to the Video I/O Boards" on page 185.

Attaching the Codec Modules to the Video I/O Boards

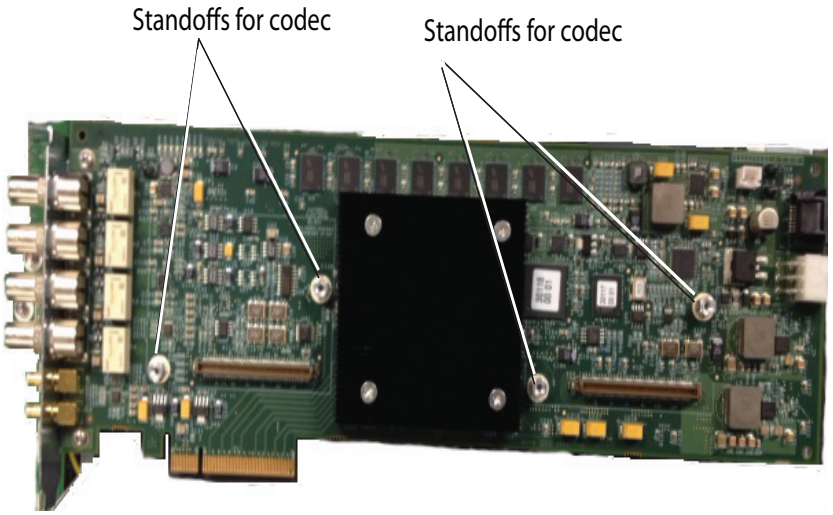
This topic contains information on how to attach two (2) codec modules to each Video I/O board.

For 2-channel model servers, attach the codec modules to a single Video I/O board.

This procedure applies to both the MPEG-2 HD and the AVC-Intra Upgrade packages for both 4-channel and 2-channel model servers.

To attach the Codec modules to each Video I/O board:

1. Open the MPEG-2 HD, or AVC-Intra Upgrade package that contains the codec modules that you are upgrading to, and place them on your workspace.
2. Locate Video I/O board #1 (VIO 1), and place it component side up (with the standoffs showing).



3. Using the supplied set screws and a #2 Phillips head screwdriver, do the following:
   a. Align the holes in the codec to the standoffs on the Video I/O board
   b. Firmly attach the first codec to the connector on the Video I/O board.

Codecs can only be placed one way.

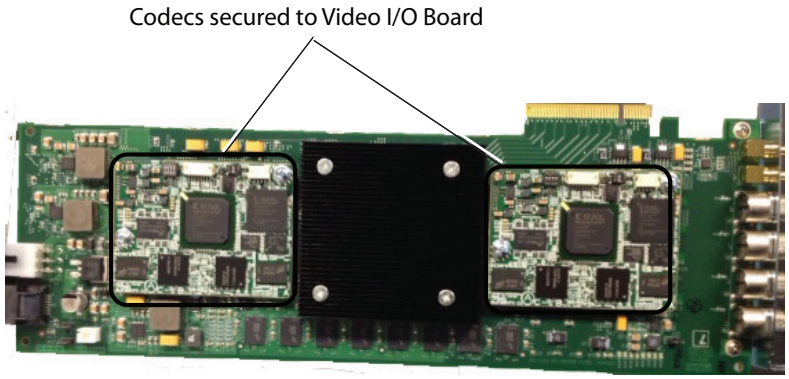
   c. (Option: For 4-channel model servers only) Repeat Step 3 for the second codec.

4. (Option: For 4-channel model servers only) Locate Video I/O board #2 (VIO 2), and place it component side up (with the standoffs showing).
5. Using the supplied set screws and a #2 Phillips head screwdriver, do the following:
   a. Align the holes in the codec to the standoffs on the Video I/O board
   b. Firmly, attach the first codec to the connector on the Video I/O board.

Codecs can only be placed one way.

   c. (Option: For 4-channel model servers only) Repeat Step 5 for the second codec.

   When both codecs are screwed down to the Video I/O board, it will look like this:



6. The next step is to replace the Video I/O board(s) (with the new codec modules installed) back into the server.

Replacing the Video I/O Boards into the Chassis

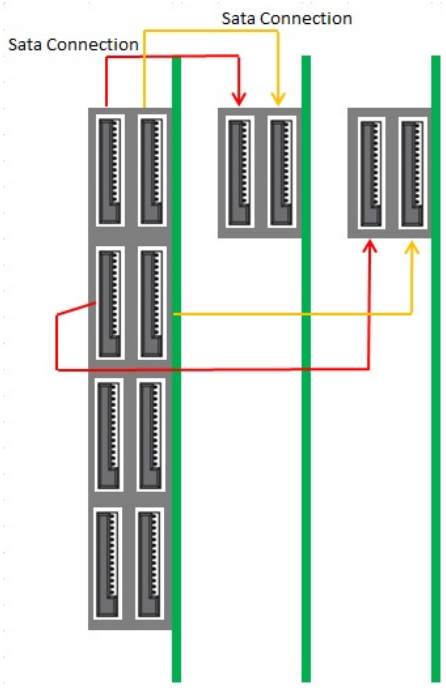
This topic contains information on how to replace the Video I/O boards in the server chassis.

To replace the VIO boards into the chassis:

1. Observe the safety precautions described in "Electrostatic Discharge Precautions" on page 179 and "Safety and Regulatory Information" in the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.
2. (Option: For 4-channel model servers only) Gently replace the bottom Video I/O board (VIO 2) into the riser card.
3. Gently replace the top Video I/O board (VIO 1) into the riser card slot.
4. Replace the Board Locking Bracket back down into its slot, and tighten the thumbscrews.

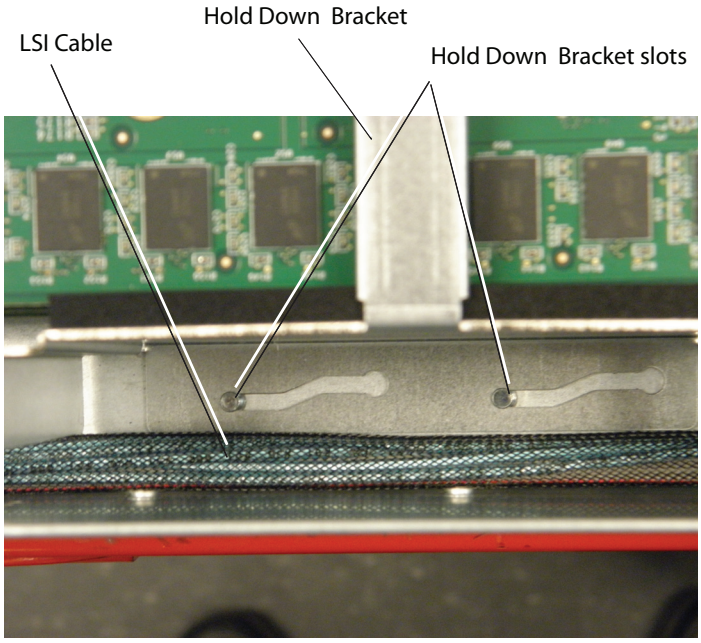
5. Reattach the SATA and Power cables for each Video I/O board (VIO 1, VIO 2) as follows:
   a. Reattach the Power Harness (yellow and black cable) to the Video I/O board.
   b. Reattach the two SATA (red) cables to the Video I/O board.

Make sure the SATA cables are connected (Top to Top, and Bottom to Bottom).



6. Replace the Hold Down Bracket by sliding it back into place. Once in place, tighten the thumbscrews.

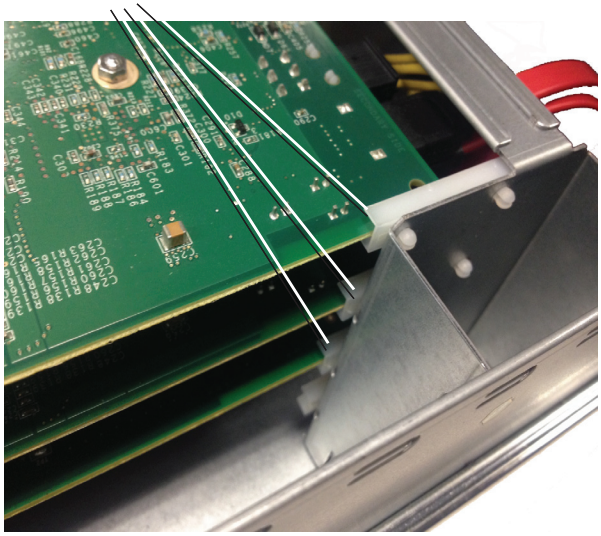
Lift the LSI cable that goes along the side of the chassis, so that the Hold Down bracket sits at the bottom of the chassis in its slot, then, tighten the thumbscrews.



7. Reattach the Card guide, and tighten the thumbscrews.

When reattaching the Card guide, make sure the Video I/O boards and Hydra card (bottom), are secured in their respective slots. This is an example of a 4-channel model server showing two Video I/O cards.

Make sure the board(s) and Hydra card (bottom) fit in the slot guides as shown



8. (Option) Reattach any cables that were removed from any add-in cards.
9. Replace the server main cover, and tighten the thumbscrews. For more information, see "Removing and Replacing the Server Main Cover" on page 180.
10. Reconnect all peripheral devices and the AC power cords into the server.
11. Power up the server.
12. Perform system diagnostics to make sure the codec has been applied properly, as well as to make sure your system's hardware is working properly. For more information, see "Performing System Diagnostics" on page 190.

Performing System Diagnostics

The AirSpeed 5000 Hardware Test is a diagnostic program that is designed to test the Avid-specific hardware components present on the AirSpeed 5000 or AirSpeed 5500 server. Specifically, the diagnostic program can be used to verify that the Avid hardware is working properly and it can confirm compatibility with external audio and video devices.

Quit all applications before running the diagnostic program.

To access the diagnostic tool, do one of the following:

- Navigate to **C:\Program Files (x86)\Avid\ AirSpeed\Utilities\DiagnosticUtilities**, and select **Airspeed5000Test.exe**.
- From the desktop, locate the **Support Apps** folder, and select **Airspeed5000Test.exe**.

When you start the diagnostic program, it searches the system for the attached Avid hardware and product software. Once the diagnostic program starts, it identifies the product and displays the information at the top of the Diagnostic window.

Once the diagnostic window is open, the diagnostic program is ready to run. For information on starting the Diagnostic program, see “Starting the Hardware Test” on page 193.

This chapter includes the following topics:

- Diagnostic Window Explained
- Reviewing Hardware Information
- Starting the Hardware Test
- Playing a Video Frame
- Capturing from an External Video Source
- Testing Audio Outputs
- Capturing from the Play Frame Video (Loopback Mode)
- Testing Disk Performance
- Testing the SDI Raw Feed
- Viewing Error Logs
- Diagnostic Test Failed

Diagnostic Window Explained

The diagnostic window is divided into following sections:

- The Information section displays revision and identification information about the Avid hardware, including Base Board Information, and VIO Board information.
- The Hardware Test allows you to select the loopback cables that are connected to your system. When one of these cables is selected for testing, the required connection information is displayed in the Required Connections area. If the test fails, the log information and error reporting displays in a separate Information Window. Red text indicates a failed component, green text indicates a passed component.
- The Video section allows you to choose your video format, Play Frame, and Capture source to test the video output or input for Play and Capture.
- The Audio section allows you to select the Audio and Frequency to test the audio outputs.
- The Disk Performance section allows you to perform additional disk performance tests as instructed by Avid Customer Support Representatives.
- The SDI Raw Rec/Play section allows you to test the SDI Raw feed for both record and playout.

Reviewing Hardware Information

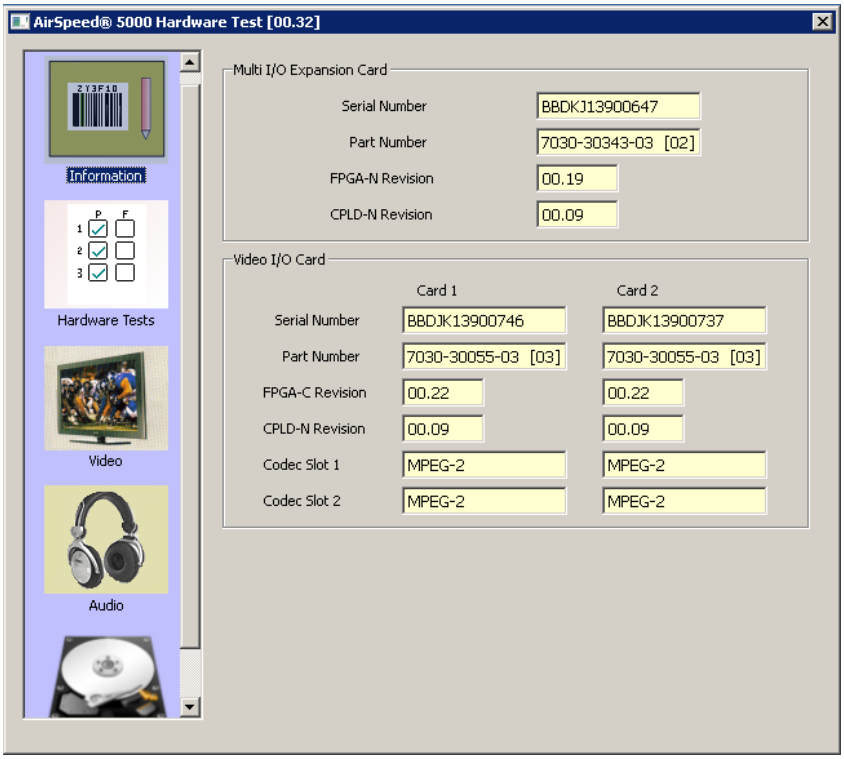
The Information section of the Diagnostic window displays hardware information.

To check the hardware information:

1. Navigate to **C:\Program Files (x86)\Avid\Avid AirSpeed\Utilities\DiagnosticUtilities**, and select **Airspeed5000Test.exe**. Or, from the desktop, locate the **Support Apps** folder, and select **Airspeed5000Test.exe**

   The Avid AirSpeed 5000 Hardware Test dialog box opens. The version shown in the title bar following screen example is [00.32]. You might have a later version, and therefore, your values might be different.

AirSpeed 5000 or AirSpeed 5500 2-channel model servers only contain a single Video I/O card (Card 1). Therefore, they would not display information for Card 2.



2. Click the Information icon.

   A text editor opens and displays the information as follows:

   Multi I/O Expansion Card

   - Serial Number
   - Part Number
   - FPGA_N Revision
   - CPLD_N Revision

   Video I/O Card (for Slot 1 and Slot 2)

   - Serial Number
   - Part Number
   - FPGA_C Revision
   - CPLD_N Revision

- Codec Slot 1 - If your server is an AirSpeed 5000 model (with older MSQ201 codecs), “MPEG-2” displays. If your server is an AirSpeed 5500 model (with newer MSQ211 codecs), “MPEG-2/XAVC” displays.
- Codec Slot 2 - If your server is an AirSpeed 5000 model (with older MSQ201 codecs), “MPEG-2” displays. If your server is an AirSpeed 5500 model (with newer MSQ211 codecs), “MPEG-2/XAVC” displays.

This information is saved in text format as a .log file. You can open the saved file with any text editing application and print it. See the topic “Viewing Error Logs” on page 204 for more information about the .log file.

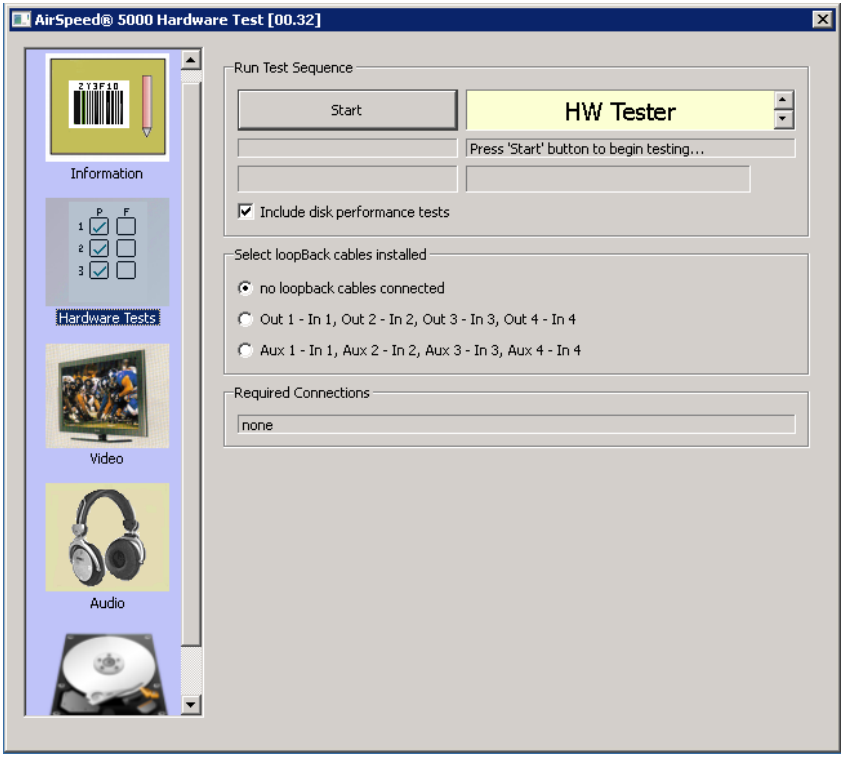
Starting the Hardware Test

The core test verifies the baseboard and VIO board information. If you want, you can run additional tests by connecting loopback cables to their respective input signals.

To begin testing:

1. Click the **Hardware Tests** icon.

   The Hardware Tests section opens.


AirSpeed® 5000 Hardware Test [00.32]
Information
Hardware Tests
Video
Audio
Run Test Sequence
Start
HW Tester
Press 'Start' button to begin testing...
Include disk performance tests
Select loopBack cables installed
no loopback cables connected
Out 1 - In 1, Out 2 - In 2, Out 3 - In 3, Out 4 - In 4
Aux 1 - In 1, Aux 2 - In 2, Aux 3 - In 3, Aux 4 - In 4
Required Connections
none

2. (Optional) To run additional tests, connect all the required external cables.
3. (Optional) Select the cables you connected and the additional tests you want to run from the “Select loopback cables installed” list.

   After you select the external cable installed, the required connections section displays information about where to connect the cable. Verify that you have connected the cable to the correct connections.
4. Click **Start**.

   The test runs. Information about the test and a status bar appear.

   After the test sequence is finished, a Passed or Failed display appears in red or green. Green indicates the test sequence has passed. Red indicates the test has failed.

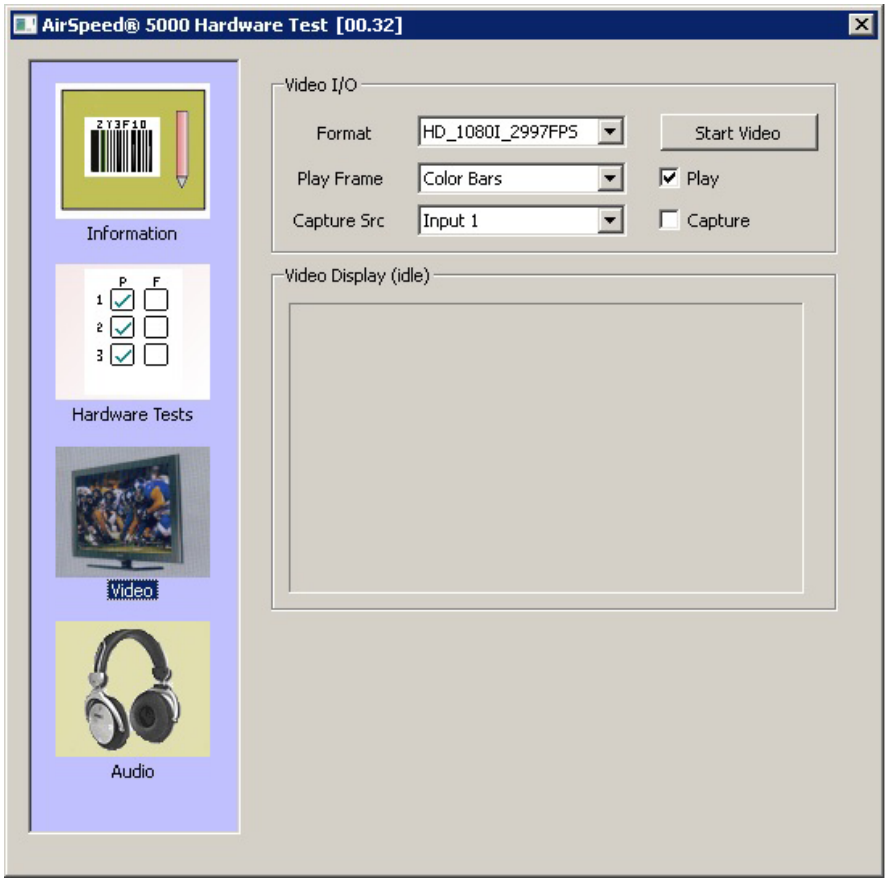
Playing a Video Frame

Playing a video frame allows you to test the video signal and configures the hardware to play a video image from the 8 outputs. The video image appears in the Video display.

To play a video image:

1. Click the **Video** icon.

   The Video section opens.



2. Click **Play**, and deselect Capture if it is selected.
3. In the Format field, select the video format that you want to test.

4. Select the Play Frame. Options are:
   - Color Bars
   - Sweep Pattern
   - Test Image
5. Click **Start Video**.

   The video appears in the Video Display window, and appears in all other video outputs.
6. To stop play at any time, click **Stop Video**.

Capturing from an External Video Source

You can test capture and display video from a selected source.

To capture video:

1. Click the **Video** icon.

   The Video section opens, and the video image appears in the Video display.
2. Click **Capture**, and deselect Play if it is selected.
3. In the Format field, select the video format that you want to test.
4. Select a capture source from the Capture Src list.
5. Click **Start Video**.

   The video appears in the Video Display window.
6. To stop play at any time, click **Stop Video**.

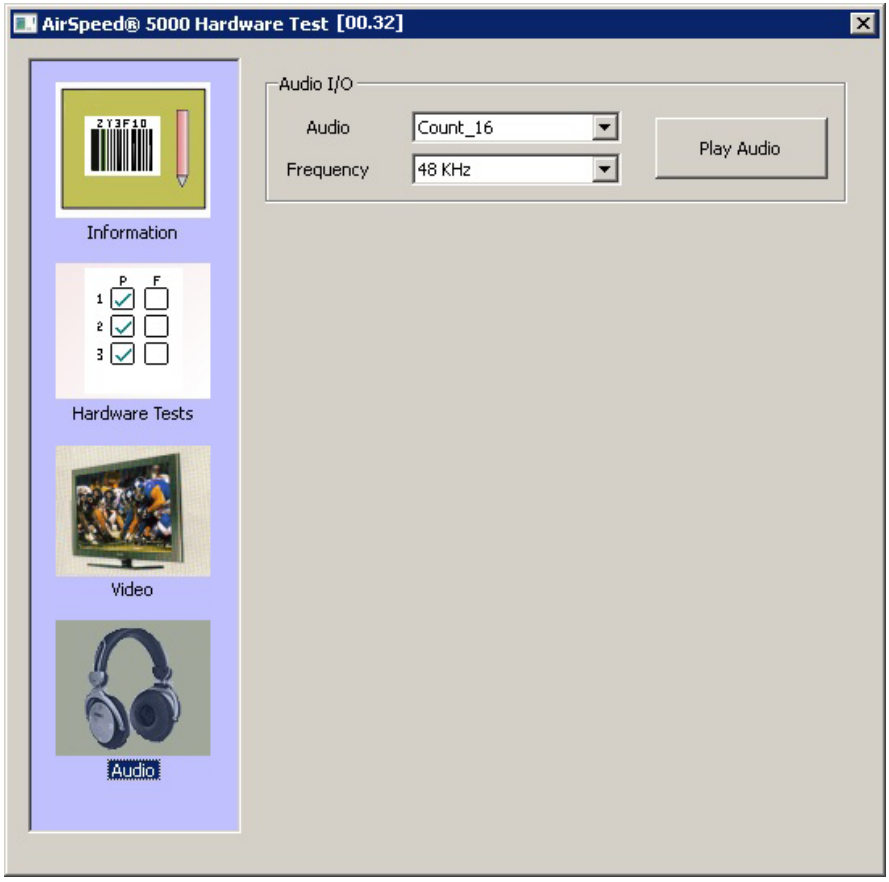
Testing Audio Outputs

Audio testing allows you to configure the hardware to play audio tones from all of the audio output ports.

To play audio:

1. Click the **Audio** icon.

   The Audio section opens.



2. Select the Audio tone:
   - Count_16
   - Lo_1kHz
   - Hi_1kHz
3. Select the Frequency (48kHz).

4. Click **Play Audio**.

   The audio tone plays. You will hear the spoken number of the audio channel.

5. To stop audio at any time, click **Stop Audio**.

   The video appears in the Video Display window, and appears in all other video outputs.

Capturing from the Play Frame Video (Loopback Mode)

If you connect the video source input to the matching video play output with a loopback cable, you can capture the frame and display it in the Video Display window.

To capture video:

1. Click the **Video** icon.
2. Click **Play**, and then click **Capture**.
3. Connect the loopback cable.
4. Select a video format:
   - HD_1080I_2997FPS
   - HD_1080I_25FPS
   - HD_720P_5994FPS
   - HD_720P_50FPS
   - SD_NTSC_486
   - SD_PAL_576
5. Select a capture source from the Capture Src list.
6. Click **Start Video**.

   The video appears in the Video Display window.

   The frame that is captured from the selected source connected to the output appears in the Video display window.

7. To stop play at anytime, click **Stop Video**.

Testing Disk Performance

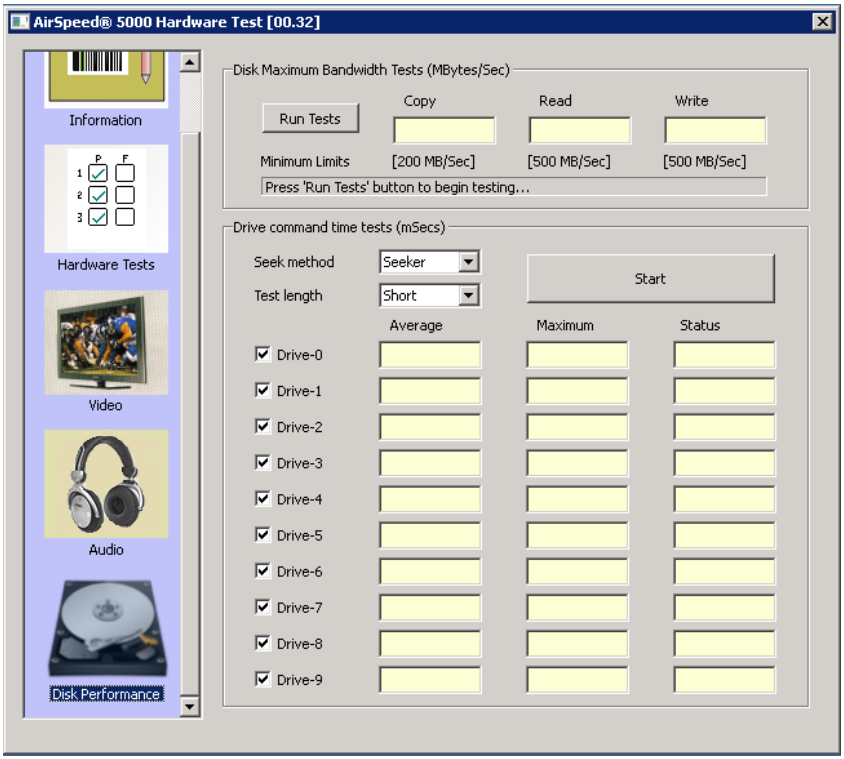
Disk performance testing is designed to help Avid Customer Support Representatives investigate potential disk performance errors and issues. Depending on the nature of your failure, you might be asked to run these tests to provide information about specific problems.

Basic tests are already included in the Hardware Tests tab.

To test disk performance:

1. Click the **Disk Performance** icon.

   The Disk Performance section opens.



2. Type information in the fields as specified by Avid Customer Support Representatives only.

Testing the SDI Raw Feed

This topic contains information on how to test the SDI Raw feed to determine if it is connected and working correctly, or to help Avid Customer Support Representatives investigate potential errors and issues.

This tool is designed to help diagnose potential issues with the SDI stream. For example, using this diagnostic tool, you can record a short video clip and supply Avid with the media in an SDI raw format.

When running this test, the files generated are a raw SDI stream. This means these files can become very large, very quickly. Therefore, it is recommended that you create shorter clips (less than 30 seconds each) if possible.

Before you begin the procedure, you must check your Video input and output connections on your server to make sure they are connected as follows:

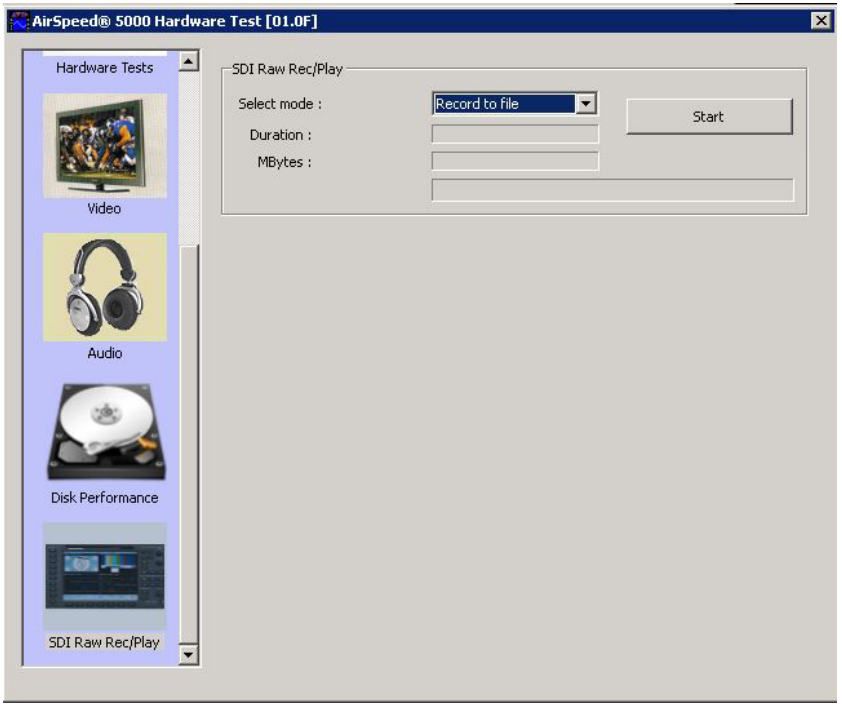
- The Video input/SDI BNC should be connected to the output of the system that is to be recorded from.
- The Video output/SDI BNC should be connected to a monitor for test purposes.

After running other hardware tests, we recommend that you power-cycle your AirSpeed server before running the SDI Raw Feed test described in this topic. This will ensure all components are properly initialized for this specific tool.

To test the SDI Raw feed:

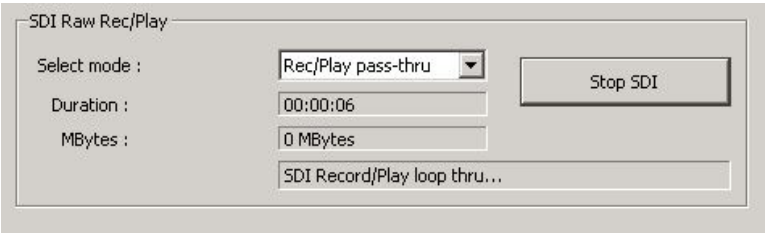
1. Click the **SDI Raw Rec/Play** icon.

   The SDI Raw Rec/Play section opens.



2. In the Select mode drop list, select **Rec/Play pass-thru**.
3. Click **Start**.

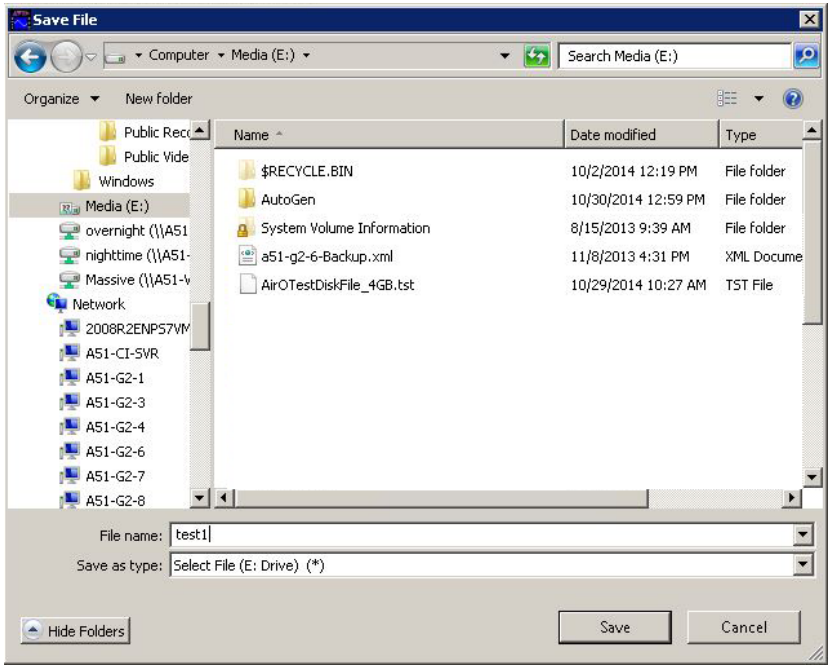
   The output of the AirSpeed 5000 or AirSpeed 5500 server should show what is connected to the input. This confirms that the server is receiving a valid video/SDI input signal and able to loop it through to the output.



4. Stop the video/SDI loop through by selecting **Stop SDI**.

   If the loop through was successful, the system is now ready to capture uncompressed video/audio.
5. In the Select mode drop list, select **Record to file**.
6. Click **Start**.

The Save File dialog box opens:



7. Do the following in the Save File dialog box:
   a. In the left pane, select the **Media (E:)** drive as the drive that will store the media.

      The Save as type field, displays **Select File (E: Drive) (*)**.

   b. In the File name field, type the file name for the uncompressed capture/record of video and audio (e.g., **Test 1**).

   c. Click **Save** to start the uncompressed capture of media.

      The video begins recording to the location and file specified.

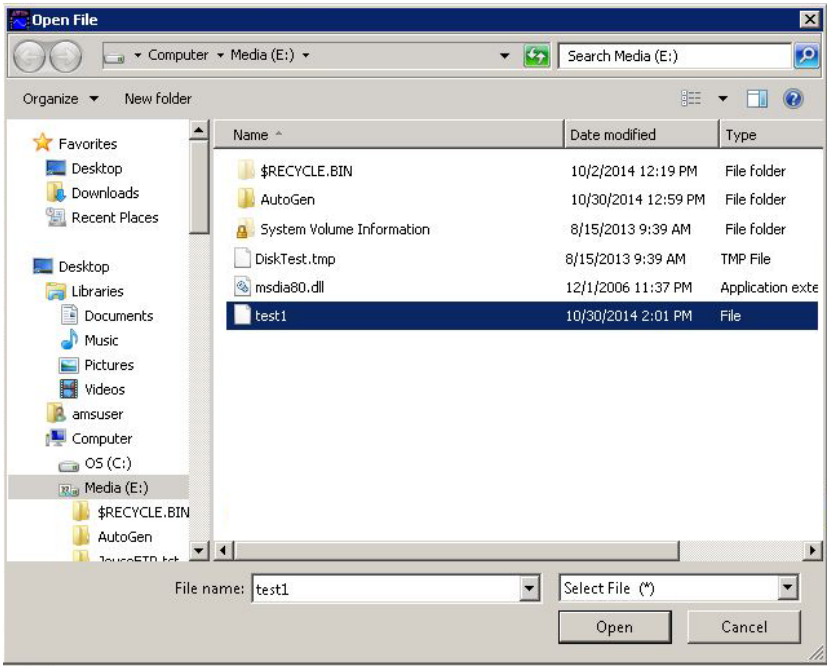
   Once recording has begun, the incoming SDI stream will record all events in the SDI stream, including changes made using video/audio switchers and other routing changes. These changes may impact the SDI signal in unexpected ways, and can affect the operation of the AirSpeed system.

8. After the effect has completed, the capture/record can be stopped by clicking **Stop SDI**.

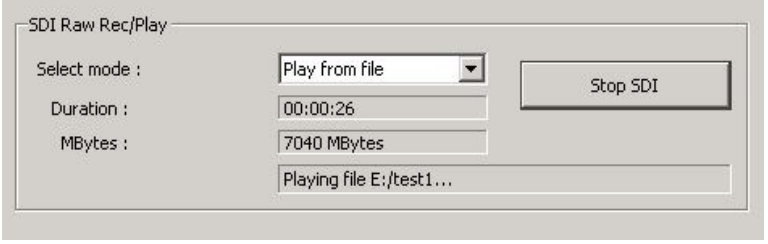
   After performing a data capture, the file can be played back.

9. In the Select mode drop list, select **Play from file**.
10. Click **Start**.

    The Open File dialog box opens:



11. Do the following in the Open File dialog box:
    a. Select the "**E:**" drive as the source of the file.
    b. Select the file (e.g., **test1**) that you want to play. The name appears in the File name field.
    c. Click **Open** to start the playout of the recorded media.



At this point, the recorded raw media plays out at the output of the AirSpeed 5000 or AirSpeed 5500 server as an SDI stream.

When the playback is complete, the "Stop SDI" button returns to "Start".

Performing this procedure creates large files. If left on your server, these files can consume much needed space on your hard drive. Therefore, we recommend that you remove these files from your server to free up space. To do so, simply copy any files created by the SDI raw test to external storage, and then delete the local copy from your server.

If the video output does not appear properly, or you experience other problems, power-cycling the system should resolve these issues. Then, return to Step 1, and test the SDI Raw feed again.

Viewing Error Logs

If an error is detected during a test, information about the error is recorded to the log file. The board information along with the log file is saved in the a .txt file.

To navigate to the log file, go to **C:\Program Files (x86)\Avid\AirSpeed\Utilities\DiagnosticUtilities\DIAG_LOG_FILES**.

The name of the log file is **AED_LOG_YBBKxxxxxx.TXT** (where YBBKxxxxxx is the board serial number). The log records the results each time the diagnostics are performed. To start a clean log file, rename, delete or move the current .txt file.

The log file displays the following:

- The name of the test
- If it passed or failed
- If it failed and why it failed
- The time and date that it failed

To view the error log:

- Browse to the .txt file and double-click the file icon. A text editor will open and display the information. Print this file from the application if you want a hard copy.

Diagnostic Test Failed

If a test fails, check the following and run the diagnostics again before contacting your Avid representative.

Do the following to resolve the problem:

1. Check that all other applications are closed.
2. Reseat all external cables. Make sure you have connected the appropriate cable for the test you are running.
3. Quit the diagnostic application and restart it.

4. Run the diagnostics again.
5. If you still are having problems, power cycle the CPU.

   This power cycles the Avid hardware.
6. Run the diagnostics again.
7. If the failure persists, save the log file and contact your Avid representative.
8. Your next step is to install and configure your system software.

For information on how to install and configure your system software, see "Configuration Requirements" on page 10.

A Using AirSpeed 5000 with FTP

This section describes the AirSpeed 5000's interoperability with FTP, including the following:

- General Guidelines on Using FTP with AirSpeed 5000
- AirSpeed 5000 MXF OP1A Files
- Supported Video and Audio Formats
- FTP Workflow Examples

General Guidelines on Using FTP with AirSpeed 5000

This topic contains some general guidelines on how AirSpeed 5000 supports the use of FTP to transfer media files.

In general, FTP functionality has been tested with a limited number of FTP clients and workflows. Based on your particular tools and workflow, performance might vary, or may require further actions.

- In order to use FTP with AirSpeed 5000, you need to check the FTP option, and supply an FTP user name and password in the User's page. You cannot use "admin" or "FTP" as FTP user names. For more information, see the "The Users Page" on page 57.
- Regular transfers and FTP transfers share system resources (including CPU, disk, and network bandwidth). As activity grows on the system, performance can be impacted. Therefore, we recommend that you limit the total number of simultaneous transfers (shared storage and FTP) to and from the system to no more than four. However, depending on your workflow, you might be able to sustain more activity. Therefore, your results may vary.

The limit of four simultaneous FTP transfers is based on 50mb formats where four channels are in use and transferring data to and from shared storage (ISIS). If you are using higher bitrates, your FTP transfers could be substantially slower.

The priority of transfers will always be given to Shared storage transfers as opposed to FTP transfers.

To achieve and promote optimal stability and performance in your workflow, consider the following:

- As discussed previously, to increase your “realtime” system performance, limit your simultaneous FTP transfers to and from the system to no more than four (4).
- If you want to play clips while they are transferring via FTP to the server, try to avoid performing Transfer Engine transfers at the same time as FTP transfers.
- Performing large deletes may slow the response of the system to inventory requests and transfer activity. Instead, we recommend that you perform smaller deletions periodically, or schedule larger deletions during times of lower activity.
- If you are experiencing slow system performance when performing multiple transfers, try setting the Read/Write buffer size on your FTP client to a larger buffer size. We recommend 256k. Other values will operate, but might not provide the best experience.
- If you are experiencing performance issues, check to see if your FTP client supports throttling. If so, we recommend that you adjust the throttle settings in your FTP client to allow for sustained bandwidth throughout the length of the transfer.

- The use of “Anonymous FTP” is not supported.
- DNX 85/100 might not be supported by Final Cut Pro or Omneon.
- FTP operates over Port 21. By default, this port is not blocked by a firewall. However, depending on your client configuration, it might be necessary to open this port.
- The AirSpeed 5000 FTP server does not support Avid Media Browser.
- Once you have connected to your server, the media files available on the server can be found in the directory **FTP://[SERVERNAME]/active/clips**.
- File size, as viewed on the server from your FTP client might not match the file size of the transferred MXF OP1A file. This could be because of the following reasons:
  - The file size on the server is based on the format of the file on the server. That file is not an MXF OP1A file. Therefore, transferring it via FTP creates a new MXF OP1A files that is different from the source.
  - If someone has set In and Out points, the clip will be different in size. Only the media between the In and Out point will be transferred. To verify the correct In points and Out points for the clip, launch the AirSpeed 5000 Remote Console application, open the Inventory pane, and review the clip from there.

- Folder names denoting where FTP clips will be transferred are case-sensitive. Therefore, if a folder name is not entered properly (e.g., with incorrect case sensitivity), clips will not be transferred to the correct destination folder. Instead, they will be transferred to the C: drive of the AirSpeed 5000 or AirSpeed 5500 server.
- Due to compatibility issues across different products, you should avoid using these characters: *** | \ : " . < > ? / % # [-** . For examples, see the following:
  - In many cases, we will prevent these characters from being entered. For example, if you type any of these characters *** | \ : " . < > ? /**, transfers will fail.
  - If you type a percent (%), it will be converted to an underscore (_) in the Clip Name, and/or Video ID fields.

AirSpeed 5000 MXF OP1A Files

In AirSpeed 5000, the transfer of media via FTP is performed by using MXF wrapped (OP1A) files. These files follow the OP1A pattern as specified in **SMPTE Specification #378M**.

This means all media (i.e., video, audio, data tracks) is wrapped in an MXF OP1A file. The wrapped media must conform to the operational points supported by the AirSpeed 5000.

Currently, AirSpeed 5000 generates MXF files in which the audio is formatted in stereo pairs. We support a maximum of four (4) pairs of audio for SD formats, and eight (8) pairs of audio for HD formats. The consumer of files we generate must support audio formatted in stereo pairs. If you send clips to the AirSpeed 5000 or AirSpeed 5500 server, we support mono, stereo pairs and Broadcast .wav. If you have a source .mxf file with mono audio, transfer it to the AirSpeed 5000 or AirSpeed 5500 server, and then re-transfer that clip back to another location via FTP, the new file will be rewrapped as a stereo pair. Because of the rewrapping involved in the MXF rewrapping process, file sizes might be different. However, the actual clip duration and content should not change.

For more information, see "Supported Video and Audio Formats" on page 208

Supported Video and Audio Formats

This topic contains the supported video and audio formats supported by the AirSpeed 5000 or AirSpeed 5500 server. This information is also available in the “Specifications” chapter of the *AirSpeed 5000 / AirSpeed 5500 Setup Guide*.

Supported Video formats are listed below:

- DV25
- DV50
- IMX30
- IMX50
- HDV25mb
- MPEG-2-HD 35mb 1080i
- MPEG-2-HD 17.5mb 1080i
- MPEG-2-HD 35mb 1080i
- MPEG-2-HD 50mb 1080i
- MPEG-2-HD 50mb 720p
- MPEG-2 HD 35mb 720p
- DNxHD 120/145 8-bit 1080i
- DNxHD 120/145 8-bit 720p
- DNxHD 185/220 10-bit 1080i
- DNxHD 185/220 10-bit 720p
- DNxHD 85/100 8-bit 720p
- DNxHD 85/100 8-bit 1080i
- AVC-Intra 50mb 1080i
- AVC-Intra 50mb 720p
- AVC-Intra 100mb 1080i
- AVC-Intra 100mb 720p

For Audio, we support the following:

- Sample rate: 48kHz
- Bit depth: PCM16, PCM24
- Dolby E 5.1 Preservation

FTP Workflow Examples

This topic contains some common FTP workflows that have been tested with AirSpeed 5000 and a representative FTP client.

FlashFXP allows you to connect to two different FTP sources at the same time, allowing you to move clips directly between FTP servers (from one to another).

The following topics are included:

- "Software Revisions Tested for FTP" on page 209
- "Working with Sony MPEG-2 HD Decks" on page 210
- "Transferring Media Between Two AirSpeed (5000 or 5500) Servers" on page 210
- "Transferring Media Between AirSpeed (5000 or 5500) and Omneon Servers" on page 211
- "Transferring Media Using Final Cut Pro and FTP" on page 211
- "Transferring Media Using FCP Filezilla FTP with DNxHD" on page 213

Software Revisions Tested for FTP

We performed our workflow testing using the following software products and revisions:

Other tools and workflows might offer different options. Look through the requirements and determine which solutions meet your needs.

- XDCAM transfer. For information, navigate to: **http://pro.sony.com/bbsc/ssr/micro-xdcam/resource.downloads.bbsccms-assets-micro-xdcam-downloads-XDCAMSoftwareDownload.shtml#apps**
- DNxHD codecs for QuickTime. For information, navigate to **http://avid.custkb.com/avid/app/selfservice/search.jsp?docid=372311**
- FCP 7.0 ON MAC OS X 10.6.6
- MXF4MAC: [MXF Import FCP and MXF Export Suite Packages]. For information, navigate to **http://home.mxf4mac.com/index.php/application-plugins.html**
- Episode6: For information, navigate to **http://www.telestream.net/episode/overview.htm**
- FlashFXP: For information, navigate to **http://www.flashfxp.com/**

When using the FlashFXP workflow, we found no issues. The FlashFXP workflow transfers one at a time from the queue. Display localization might not appear to work, although transfers are still successful. FlashFXP allows for the most direct system-to-system transfer method and does not require extensive temporary storage to move files.

- Filezilla: For information, navigate to **http://filezilla-project.org/**

When using the Filezilla workflow, we have tested up to two transfers at a time. Filezilla does not allow for direct system-to-system storage, as it requires intermediate storage (local or shared).

- Transfer Manager Client v2.5
- Transfer Manager Engine v2.5
- NewsCutter v10.0.x or Symphony v6.0.x

Working with Sony MPEG-2 HD Decks

If your Sony deck can be connected to a network and has FTP capabilities, then you can use the FTP functionality available in AirSpeed 5000 to move media from the deck to the server. The following notes apply to Sony MPEG-2 HD deck integration when used with the AirSpeed 5000 Remote Console:

Transfers from AirSpeed 5000 to a Sony deck are not supported. AirSpeed 5000 outbound transfers are done with stereo pairs, and Sony decks only accept mono tracks of audio.

Depending on the FTP client you are using, there might be settings that are different. For the following workflow examples, we have used Filezilla and Flash FXP to demonstrate the basic steps to use FTP with AirSpeed 5000.

Transferring Media Between Two AirSpeed (5000 or 5500) Servers

This topic contains information on how to use Flash FXP to transfer media between two AirSpeed servers using the AirSpeed 5000 Remote Console.

This workflow example uses Flash FXP as the FTP client.

To transfer media between two AirSpeed (5000 or 5500) servers using FlashFXP:

1. Launch FlashFXP, and connect to both of the AirSpeed servers (5000 or 5500).
2. Navigate to the **[FTP://[SERVERNAME]/active/clips** directory on both AirSpeed (5000 or 5500) servers.
3. Select the clips to be transferred and drag them from one panel to the other in the FTP client. The transfer will begin.

A capturing clip is able to be transferred and played out on another AirSpeed 5000 or AirSpeed 5500 server.

Transferring Media Between AirSpeed (5000 or 5500) and Omneon Servers

This topic contains information on how to transfer media from an AirSpeed (5000 or 5500) Server to an Omneon server.

AirSpeed 5000 or AirSpeed 5500 servers do not support Omneon clips that have .aiff audio files. The clips will transfer successfully, but they will not playout.

This workflow example uses Flash FXP as the FTP client.

To transfer media from an AirSpeed (5000 or 5500) Server to an Omneon server using FlashFXP:

1. In FlashFXP, connect to both the AirSpeed (5000 or 5500) server, and the Omneon server.
2. Do the following:
   a. Navigate to the **FTP://[SERVERNAME]/active/clips** directory on the AirSpeed (5000 or 5500) server.
   b. Navigate to the **FTP://[SERVERNAME]/clip.dir** directory on the Omneon server.
3. Select the clips that you want to transfer, and drag them from one panel to the other in the FTP client. The transfer will begin.

A capturing clip can be transferred and played out on another AirSpeed (5000 or 5500) or Omneon server. However the Omneon server must keep reloading the clip to update the video playout.

Transferring Media Using Final Cut Pro and FTP

This topic contains information on how to transfer media between an AirSpeed (5000 or 5500) server and a Final Cut Pro editor using FTP (for SD, and MPEG-2 HD formats).

This workflow supports all 1080i and 720p formats, except 720p DNxHD. For DNxHD formats, see Transferring Media Using FCP Filezilla FTP with DNxHD.

MXF4Mac must be installed in advance to work with MXF OP1a files in Final Cut Pro.

When using Final Cut Pro FTP workflow, you need to install the following components:

- Avid QT Codecs for DNx support
- MXF4Mac
- Sony XDCAM Transfer (For MPEG-2 HD)

- Episode version 6 (for DNxHD or AVC-Intra)
- Filezilla

Transferring media using Final Cut Pro and Filezilla FTP (for SD, and MPEG-2 HD):

1. Open a project in Final Cut Pro.
2. Log into your shared storage and your AirSpeed (5000 or 5500) in FlashFXP or Filezilla.
3. Navigate to the **FTP://[SERVERNAME]/active/clips** directory on the AirSpeed (5000 or 5500).
4. Navigate to the chosen destination on shared storage.
5. Select the clips to be transferred and drag them from one panel to the other in the FTP client.

   The transfer will begin. Once the files are transferred to shared storage, they will reside at the destination as MXF files and can be navigated to with the Finder.

The MXF files will retain the Video ID from the AirSpeed (5000 or 5500) database.

6. Drag the MXF files into an open FCP bin.

   They will be treated like masterclips.
7. Edit the sequence.
8. When you are done editing the sequence, export it by doing one of the following:

   - Navigate to **File>Export>MXF4mac GC**

Make sure MXF4mac software is up to date and that codec licenses are present or some codecs may not function properly during export.

   - Right-click on the sequence and choose **Export**.
9. Select corresponding compression format and bit rate from the menu and save the resulting MXF OP1a file back on your Shared storage (ISIS).

   This will begin an export.
10. Once the export is complete, locate the file on shared storage using FlashFXP or Filezilla, and drag it to the AirSpeed 5000 database to initiate the transfer.

    Once transferred, the clip will be playable in the AirSpeed 5000 Remote Console.

Transferring Media Using FCP Filezilla FTP with DNxHD

This topic contains information on how to transfer media to and from an AirSpeed (5000 or 5500) server to a Final Cut Pro editor using FTP and DNxHD format.

MXF4mac lacks a DNxHD option for export. Therefore, Episode is used instead.

720pDNxHD media must be opened via QuickTime and saved as 'HD 720p' before importing into FCP or the editor may be unable to play the media.

Transferring media using Final Cut Pro and Filezilla FTP (for DNxHD only):

1. Open a project in FCP.
2. Log into your shared storage and your AirSpeed in FlashFXP or Filezilla.
3. Navigate to the **FTP://[SERVERNAME]/active/clips** directory on the AirSpeed (5000 or 5500) server.
4. Navigate to the chosen destination on shared storage.
5. Select the clips to be transferred and drag them from one panel to the other in the FTP client.

   The transfer will begin. Once the files are transferred to shared storage, they will reside at the destination as MXF files and can be navigated to with the Finder.

The MXF files will retain the Video ID from the AirSpeed 5000 database.

6. Drag the MXF files into an open FCP bin.

   They will be treated like masterclips.
7. Edit the sequence.
8. When you are done editing the sequence, export the sequence from FCP by selecting **File > Export > Using QuickTime conversion**.
9. Select **QuickTime movie**, and select **Options**.
10. In the Video section, select **Settings**, then select Avid DNxHD.
11. Select the appropriate Resolution.

For DNxHD 720p, under Motion, select a frame rate of 50 or 60, depending on your frame rate.

12. Save the QuickTime file either locally or to shared storage.
13. In Episode6, drag the exported QuickTime movie to the "File List" entry.
14. Create a new encoder with "MXF Op1a" as the container, and "QuickTime" as the Video Codec.
15. Select **Options > Compression Settings > Avid DNxHD Codec**.

16. Under Audio Codec, select the appropriate Bit Depth.
17. Select your shared storage as the Deployment destination.

    Once submitted, the process will generate the MXF file at the destination.
18. Once the export is complete, navigate to the clip in FlashFXP or Filezilla, and drag the clip across to your AirSpeed 5000 database to initiate the transfer.

    Once transferred, the clip will be playable in the AirSpeed 5000 Remote Console.

Transferring Media Using FCP and FileZilla FTP (for AVC-Intra only)

This topic contains information on how to transfer media to and from an AirSpeed (5000 or 5500) server to a Final Cut Pro editor using Filezilla FTP and AVC-Intra format.

Transferring media using Final Cut Pro and Filezilla FTP (for AVC-Intra only):

1. Open a project in FCP.
2. Log into your shared storage and your AirSpeed in FlashFXP or Filezilla.
3. Navigate to the **FTP://[SERVERNAME]/active/clips** directory on the AirSpeed 5000 or AirSpeed 5500 server.
4. Navigate to the chosen destination on shared storage.
5. Select the clips to be transferred and drag them from one panel to the other in the FTP client.

   The transfer will begin. Once the files are transferred to shared storage, they will reside at the destination as MXF files and can be navigated to with the Finder.

The MXF files will retain the Video ID from the AirSpeed 5000 database.

6. Drag the MXF files into an open FCP bin.

   They will be treated like masterclips.
7. Edit the sequence.
8. When you are done editing the sequence, export the sequence from FCP by selecting **File > Export > QuickTime movie**.
9. In the Setting menu, select **Apple ProRes 422 (HQ)**, and do the following based on your resolution:
   a. For 1080i, do one of the following:
      - If using AVCI50, select **1440x1080i 48kHz**
      - If using AVCI100, select **1920x1080i 48kHz**

   b. For 720p, do one of the following:
      - If using AVCI50, select **960x720p 48kHz**

- If using AVCI100, select **1280x720p 48kHz**

10. Select **MakeMovie Self-Contained**, and save it as a **.mov**.
11. In Episode6, drag the exported QuickTime movie to the “File List” entry.
12. Create a new encoder with “MXF Op1a” as the container, and “AVC-Intra” as the Video Codec with the appropriate AVC-Intra Class selected.
13. Select **AES** as the Audio Codec.
14. Select your shared storage as the Deployment destination.

    Once submitted, the process will generate the MXF file at the destination.
15. Once the export is complete, navigate to the clip in FlashFXP or Filezilla, and drag the clip across to your AirSpeed 5000 database to initiate the transfer.

    Once transferred, the clip will be playable in the AirSpeed 5000 Remote Console.

Maintaining a consistent number of audio channels is not guaranteed as audio mixdown settings are unique to each third party application used in these steps.

B Up, Down, Cross Convert (UDX) Examples

Overview

This appendix contains information on input and output AFD, including examples of their corresponding video formats when performing an Up, Down and Cross conversion with AirSpeed 5000.

The conversions described in this section only occur when one of the AutoAFD options is selected from one of the list boxes (SD Cross Convert, Up Convert, or Down Convert) in the UDX Options area of the Playback page of the AirSpeed 5000 Management Console.

The following topics are covered:

- Up Convert AFD Examples
- Down Convert AFD Examples
- HD Cross Convert AFD
- SD Cross Convert AFD Examples

Up/Down/Cross (UDX) Conversion

AirSpeed 5000 supports Up, Down or Cross (UDX) conversion of video formats. Using this feature, you can configure a channel to allow for conversion of a clip and its ancillary data (where available) to convert to a specific format for play-out. UDX preferences can be set in the Playback page of the AirSpeed 5000 Management Console. The following UDX options are available:

- Up Convert - SD video is up-converted to HD using one of five possible Up Convert options available in the user interface.
- Down Convert - HD video is down-converted to SD using one of five possible Down Convert options available in the user interface.
- SD Cross Convert - SD video is cross-converted (to SD) using one of six possible SD-Cross-Convert options available in the user interface.
- HD Cross Convert - This type of conversion only has one possible outcome, which is Anamorphically, based on the incoming video standard. If you have 1080i, it is automatically converted to 720p. If you have 720p, it is automatically cross converted to 1080i. There is no selection in the User Interface for HD Cross Convert.

For more information on using UDX Conversion, see “The Playback / Output Page” on page 47.

UDX Terms and Examples

This section describes the relevant UDX terms used in this guide to explain the video format behavior that occurs when various UDX options are selected. Examples are included where necessary. Terms described include the following:

- Pillarbox
- Letterbox
- Center-Crop
- Anamorphic
- Active Format Description (AFD)
- AutoAFD

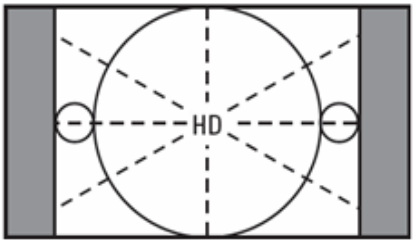
Pillarbox

A Pillarbox image typically means black “pillars” are placed on either side of an image when it is up-converted from a 4:3 image to a 16:9 image.

Pillarbox is a selection in the Up-Convert and SD-Cross-Convert list boxes. If Pillarbox is selected when up-converting a 4:3 image to a 16:9 image, black “pillars” are placed on either side of the image.

4:3 SD Image Up-Converted to 16:9 HD Pillarbox Example

The example below shows a 4:3 SD image, and then the same image after it was up-converted to an HD 16:9 pillarbox image.



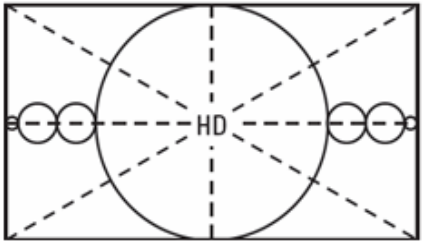
Letterbox

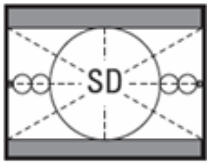
A Letterbox image typically means black bars are placed on the top and bottom of an image when it is down-converted from a 16:9 HD image to a 4:3 SD image, or cross-converted from a 4:3 HD image to a 4:3 SD image.

Letterbox is a selection available in both the Down-Convert and SD-Cross-Convert list boxes. If Letterbox is selected when down-converting a 16:9 HD image to a 4:3 SD image, black bars are placed on the top and bottom of the SD image.

16:9 HD Image Down-Converted to 4:3 SD Letterbox Example

The example below shows an HD 16:9 image, and then the same image after it was down-converted to a 4:3 SD letterbox image.





Center-Crop

Center-crop is conversion process that, if selected, crops the image to fit in the format you are converting to. Center-crop works when you are up-converting a 4:3 SD image to 16:9 HD, down-converting a 16:9 HD image to 4:3 SD, or cross-converting an SD image.

AirSpeed 5000 supports the Center-Crop in the following conversion types:

- Up-convert
- Down-convert
- SD-Cross-convert

These are described in more detail below:

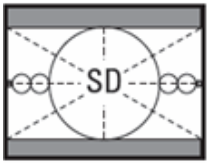
Up Convert Center-Crop

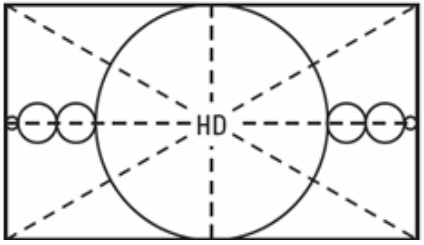
If you are up-converting a 4:3 SD image that already contains a letterboxed image, and want to convert it to a 16:9 HD output, you probably want to just remove the black bars from the top and bottom. To do so, select Center-Crop from the Up-Convert list box.

If you selected Pillarbox in this case, the video image would show black bars on the top and bottom (Letterbox), as well as black pillars on the sides. This is usually an undesired effect.

Example of a Up-Converted and Center-Cropped Image

The example below shows a 4:3 SD letterboxed image, and then the same image after it was Up-converted and Center-cropped to a 16:9 HD image.





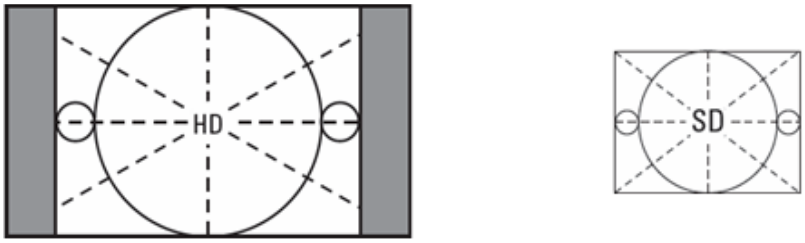
Down Convert Center Crop

If you are down-converting a 16:9 HD image that already contains a pillarboxed image, and you want to convert it to a 4:3 SD full-screen output, you probably want to just remove the black pillars from the sides. To do so, select Center-Crop from the Down-Convert list box.

If you select Letterbox instead, you will end up with black pillars on the sides, as well as black bars on the top and bottom. This is usually an undesired effect.

Example of a Down-Converted and Center-Cropped Image

The example below shows a 16:9 HD pillarboxed image, and then the same image after it was Down-converted and Center-cropped to a 4:3 SD full-screen image.



Anamorphic

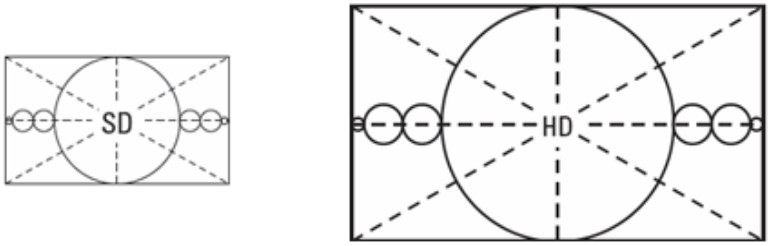
In an anamorphic image, the active image is scaled to use all available pixels, both vertically and horizontally. In AirSpeed 5000, typically you would only select Anamorphic when converting one 16:9 format to another.

For example, if you are down converting a 16:9 HD image to a 16:9 SD format, and want to scale the image vertically and horizontally using all pixels (anamorphically), select Anamorphic from the Down-Convert list box in the Channel Configuration dialog box.

When cross-converting HD 720p to 1080i (or vice versa), AirSpeed 5000 provides the anamorphic conversion by default. There is no user interface or user interaction for this to occur.

16:9 SD Image Up-Converted to 16:9 HD Example

The example below shows a 4:3 SD image, and then the same image after it was Up-converted anamorphically to a 16:9 HD image.



Active Format Description (AFD)

Active Format Description (AFD) is a type of ancillary data that can be attached to each frame of video, both into and out of AirSpeed 5000. The AFD data consists of two parts:

- A 4-bit code that identifies the active video
- An aspect ratio that defines the overall shape of the image

If Switch on Fly is selected in the Output Format Behavior field on the Playback page, AirSpeed 5000 will output AFD ancillary data for each video frame played. For information on the AFD codes used by AirSpeed 5000 for input and output AFD, including examples of their corresponding video formats when performing an Up, Down and Cross conversion with AirSpeed 5000, see “Up, Down, Cross Convert (UDX) Examples” on page 216

AutoAFD

There are two different behaviors for the AutoAFD options:

If one of the AutoAFD options is selected as the Up, Down, or SD Cross convert option, then AirSpeed 5000 will use an intelligent algorithm to reshape or convert the video image. The conversion from input format to output format is detailed in “Up, Down, Cross Convert (UDX) Examples” on page 216.

If the video being played does not contain AFD information, then AirSpeed 5000 uses the “default” specified in the configuration settings. For example, if AFD exists in the incoming video, the setting “AutoAFD Default Pillarbox” follows the approach outlined in “Up, Down, Cross Convert (UDX) Examples” on page 216, and will use Pillarbox, if AFD does not exist in the video.

ATC and VITC Timecode

For HD streams, we use Ancillary TimeCode (ATC). ATC is always stored and displayed in 25/30 Hz timing, even for progressive video formats. AirSpeed 5000 implements SMPTE RP188 Ancillary TimeCode.

For SD streams, the timecode is Vertical Interval TimeCode (VITC).

Generally, when a clip is recorded, you can select from a variety of timecode choices. The selected option is used to set the clip’s base timecode.

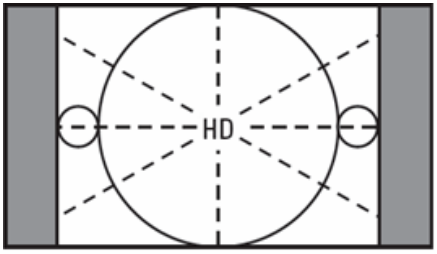
At playback time, you can select whether to use the clip’s base timecode, or the frame embedded timecode, for output to ATC or VITC.

Video Format

In SDI video, the ancillary data that defines the video format is called AFD, or Active Format Description. AFD is defined as a 4-bit number; there are 16 possible values. However, many of these are reserved and are not used. The most common AFD values include:

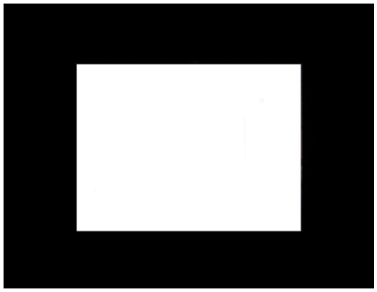
- SD, AFD=9: 4:3 image
- SD, AFD=10: 16:9 image, letterboxed (black bars at top and bottom)
- HD, AFD=10: 16:9 image
- HD, AFD=9: 4:3 image, pillarboxed (black bars on left and right sides)

The AFD code is used to describe the video format before and after conversion. One of the primary purposes of using AFD to describe the image format is so that processing and display equipment can make intelligent choices. For example, if the starting image is a pillarboxed 4:3 image (AFD=9):



When down converting this image to SD, an intelligent approach is to simply remove the black bars from the 2 sides. If the black bars are removed, then the resultant image is now a full-screen 4:3 image, and would get stamped with an AFD code of 9.

The main goal is to avoid letterboxing an image that is already pillarboxed (or vice versa). When this happens, you get black bars on both the top and bottom, and the left and right sides, and the active picture is smaller than it needs to be:

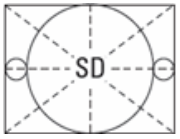
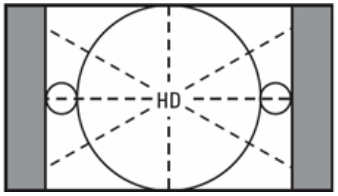
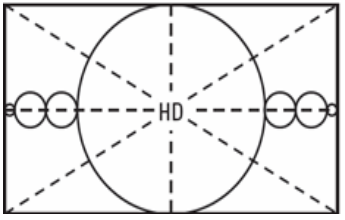
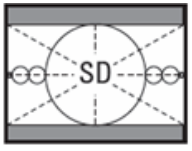
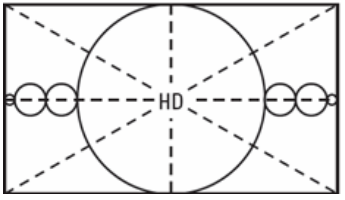


This is generally an undesirable effect. However, if you want this, you can override the ‘intelligent’ formatting based on AFD with fixed formatting during UDX conversions. The Channel Configuration dialog box provides the settings to enable you to configure how you want conversion formatting to occur.

For more information on input and output AFD including examples of their corresponding video formats when performing an Up, Down and Cross conversion, see “Up, Down, Cross Convert (UDX) Examples” on page 216.

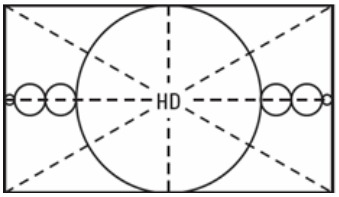
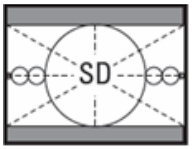
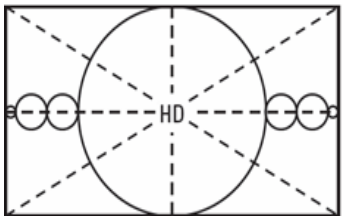
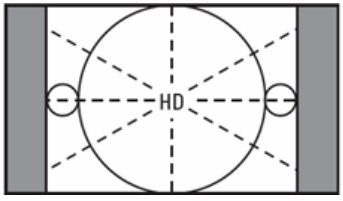
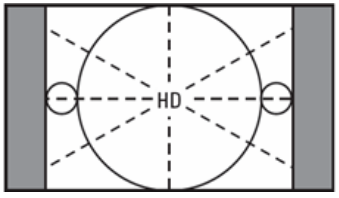
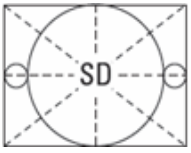
Up Convert AFD Examples

The table below shows the input and output AFD and examples of their corresponding video formats when performing an Up convert.

Input Video Format	SD Video Format	Output AFD	HD Video Format
• AFD = 8 (full frame image), or • AFD = 9 (4:3 image) Aspect Ratio = 4:3		AFD = 9 (4:3 image) Aspect Ratio = 16:9 (pillarboxed)	
• AFD = 8 (full frame image), or • AFD = 10 (16:9 image) Aspect Ratio = 16:9		AFD = 10 (16:9 image) Aspect Ratio = 16:9	
AFD = 10 (16:9 image) Aspect Ratio = 4:3 (letterboxed)		AFD = 10 (16:9 image) Aspect Ratio = 16:9	

Down Convert AFD Examples

The table below shows the input and output AFD and examples of their corresponding video formats when performing a Down convert.

Input Video Format	HD Video Format	Output AFD	SD Video Format
• AFD = 8 (full frame image), or • AFD = 10 (16:9 image) Aspect Ratio = 16:9		AFD = 10 (16:9 image) Aspect Ratio = 4:3 (letterboxed)	
• AFD = 8 (full frame image), or • AFD = 10 (16:9 image) Aspect Ratio = 16:9		AFD = 10 (16:9 image) Aspect Ratio = 16:9	
• AFD = 9 (4:3 image) Aspect Ratio = 16:9 (pillarboxed)		AFD = 9 (4:3 image) Aspect Ratio = 4:3	
• AFD = 15 (16:9 image with shoot and protect center) Aspect Ratio = 16:9		AFD = 9 (4:3 image) Aspect Ratio = 4:3	

HD Cross Convert AFD

We support HD cross convert. However, there are no user configurable options.

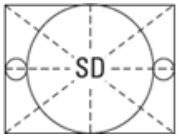
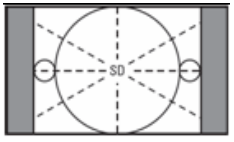
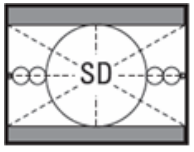
SD Cross Convert AFD Examples

The table below shows the input and output AFD and examples of their corresponding video formats when performing an SD cross convert.

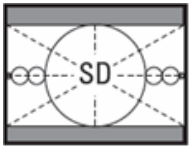
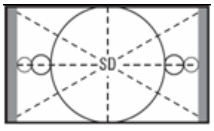
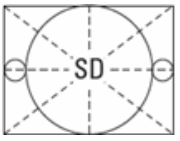
There are two methods for SD cross conversion:

- 4:3 SD In to 16:9 SD Out
- 16:9 SD In to 4:3 SD Out

SD Cross Convert for 4:3 SD In to 16:9 SD Out

Input Video Format	4:3 SD In Video Format	Output AFD	16:9 SD Out Video Format
• AFD = 8 (full frame image), or • AFD = 9 (4:3 image) Aspect Ratio = 4:3		AFD = 9 (4:3 image) Aspect Ratio = 16:9 (pillarboxed)	
AFD = 10 (16:9 image) Aspect Ratio = 4:3 (letterboxed)		AFD = 10 (16:9 image) Aspect Ratio = 16:9	

SD Cross Convert for 16:9 SD In to 4:3 SD Out

Input Video Format	16:9 SD In Video Format	Output AFD	4:3 SD Out Video Format
• AFD = 8 (full frame image), or • AFD = 10 (16:9 image) Aspect Ratio = 16:9		AFD = 10 (16:9 image) Aspect Ratio = 4:3	
AFD = 9 (4:3 image) Aspect Ratio = 16:9 (pillarboxed)		AFD = 9 (4:3 image) Aspect Ratio = 4:3	

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